



Course guides

230816 - BDR - Big Data and R Programming

Last modified: 29/04/2020

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 749 - MAT - Department of Mathematics.

Degree: BACHELOR'S DEGREE IN TELECOMMUNICATIONS SCIENCE AND TECHNOLOGY (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN AUDIOVISUAL SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN ELECTRONIC SYSTEMS ENGINEERING (Syllabus 2009). (Optional subject).
BACHELOR'S DEGREE IN TELECOMMUNICATIONS SYSTEMS ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN NETWORK ENGINEERING (Syllabus 2010). (Optional subject).
BACHELOR'S DEGREE IN TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Optional subject).

Academic year: 2020 **ECTS Credits:** 6.0 **Languages:** English

LECTURER

Coordinating lecturer: Josep M. Aroca Farrerons

Others: Josep M. Aroca Farrerons

PRIOR SKILLS

Probability and Statistics

TEACHING METHODOLOGY

Lectures
Application classes
Laboratory classes

LEARNING OBJECTIVES OF THE SUBJECT

Programming in R. Data modeling. Big Data methods and examples.

STUDY LOAD

Type	Hours	Percentage
Hours small group	52,0	34.67
Self study	98,0	65.33

Total learning time: 150 h



CONTENTS

Introduction to R

Description:

The R project. Basic operations. Reading data. Graphics.

Full-or-part-time: 8h

Laboratory classes: 8h

Data modeling

Description:

Statistics in R. Linear models, regression. Using factors. Visualizing data.

Full-or-part-time: 12h

Laboratory classes: 12h

Big Data overview

Description:

A general description of the Big Data paradigm/problems/methods.

Full-or-part-time: 8h

Laboratory classes: 8h

Big Data methods

Description:

Predictive analytics, machine learning, data mining.

Full-or-part-time: 10h

Theory classes: 10h

Examples

Description:

Case example problems

Full-or-part-time: 14h

Theory classes: 14h

GRADING SYSTEM

Laboratory assessments: 100%



BIBLIOGRAPHY

Basic:

- Teetor, P. R cookbook [on line]. Sebastopol, CA: O'Reilly Media, 2011 [Consultation: 19/02/2019]. Available on: <https://ebookcentral.proquest.com/lib/upcatalunya-ebooks/detail.action?docID=680900>. ISBN 9781449307264.
- Torgo, Luis. Data mining with R: learning with case studies [on line]. 2nd. ed. Chapman and Hall/CRC, 2017 [Consultation: 22/04/2020]. Available on: <https://ebookcentral.proquest.com/lib/upcatalunya-ebooks/detail.action?docID=4751228>. ISBN 9781315399096.