

# DIGITAL MANAGEMENT (LB46)

(Lecce - Università degli Studi)

## Teaching BUSINESS ANALYTICS

GenCod A005238

**Owner professor** FABRIZIO DURANTE

**Teaching in italian** BUSINESS ANALYTICS

**Teaching** BUSINESS ANALYTICS

**SSD code** SECS-S/06

**Reference course** DIGITAL MANAGEMENT

**Course type** Laurea

**Credits** 6.0

**Teaching hours** Ore-Attività-frontale: 36.0

**For enrolled in** 2019/2020

**Taught in** 2021/2022

**Course year** 3

**Language** INGLESE

**Curriculum** ECONOMICO

**Location** Lecce

**Semester** Primo-Semestre

**Exam type** Scritto-e-Orale-Congiunti

**Assessment** Voto-Finale

**Course timetable**  
<https://easyroom.unisalento.it/Orario>

### BRIEF COURSE DESCRIPTION

The course presents a vast set of machine learning tools for understanding and making prediction from the data. All the presented tools are illustrated in several real case studies with the software R.

### REQUIREMENTS

Basic elements of calculus and statistics for data analysis.

### COURSE AIMS

Knowledge and understanding:

- Knowledge and understanding of machine learning models;
- Knowledge and understanding of quantitative tools for business, including segmentation and prediction.

Applying knowledge and understanding:

- Ability to extract relevant information from big dataset for management and business innovation.
- Ability to identify the machine learning models that are suitable to analyse correctly a specific business problem.
- Ability to use a specific programming language to implement machine learning procedures.

Making judgments:

Making judgements on pros and cons of different machine learning tools.

Communication skills:

to present in a concise way the results of a quantitative analysis.

Learning skills:

Ability to formalize in an algorithmic form a problem of interest in business

### TEACHING METHODOLOGY

Frontal lectures, exercises, computer labs.

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## ASSESSMENT TYPE

The written exam consists of several exercises and one or more review questions. The project work consists of the preparation of a quantitative analysis related to the contents of the course with the help of the software R.

To pass the exam students must obtain a positive evaluation on both the written exam and the project. Both parts weigh 50% of the total points.

Sample of the written exam will be available at the course webpage.

There is no difference in the assessment procedures between attending and non-attending students.

University of Salento "*promuove e garantisce l'inclusione e la partecipazione effettive degli studenti con disabilità*" (art. 10 of the Statute). Students that have a disability or impairment that requires accommodations (i.e., alternate testing, readers, note takers or interpreters) could contact the Disability and Accessibility Offices in Student Services: [paola.martino@unisalento.it](mailto:paola.martino@unisalento.it)

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## ASSESSMENT SESSIONS

See Department webpage.

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## OTHER USEFUL INFORMATION

More information will be available on the course webpage at [formazioneonline.unisalento.it](http://formazioneonline.unisalento.it)

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## FULL SYLLABUS

Introduction to Data Science and Machine Learning.

Linear Model. Non-linear Regression.

Cross validation.

Shrinkage methods. Lasso.

K-Nearest neighbour algorithms.

Classification. Logistic regression.

Unsupervised learning. K-means algorithms.

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## REFERENCE TEXT BOOKS

Lectures notes will be provided. The teaching material will be made available through the Lecture webpage at [formazioneonline.unisalento.it](http://formazioneonline.unisalento.it).

Suggested reading:

- Boehmke, B. and Greenwell, B.: Hands-on Machine Learning with R. Free available at <https://bradleyboehmke.github.io/HOML/>
- Hull, J.C.: Machine Learning in Business – An introduction to the world of data science, 2019. Slides available free online.
- James, G., Witten, D., Hastie, T., Tibshirani, R.: An Introduction to Statistical Learning with Applications in R. Springer, 2013. Free available at <https://www.statlearning.com/>