Applied Statistics

Professor: Walter Garcia-Fontes
Teaching Assistant: Roger Pagà
Course Type: Compulsory
Credits: 4 ECTS
Term: 1st

Course Description

Firms in all sectors are developing new methods to gain competitive advantage, and the use of real time data and computing is basic nowadays for data-driven decision making. In this course we will work together to analyse and interpret data about markets and costumers. In this course, future managers or scholars who need knowledge about marketing, finance, consulting, strategy or operations will find different tools that will be useful in their future careers.

The learning objectives of the course are the acquisition and use of competences consisting of or related to:

- The data analysis process, the role of the data analyst, the value of data and its relation with business models
- The R programming language as a tool to analyse and use complex data to take business decisions
- Probability tools and concepts for statistical decision making
- Implementing sampling design, confidence intervals and hypothesis tests
- Correlation, regression and causality and limitations, the impact of data on regression findings, explanatory and predictive analysis
- Basic times series analysis
- Effective communication, which involves clearly articulating the points and selling those ideas. In this course, communication skills are developed through the practice of disciplined data-driven story-telling in course projects and group presentations.

Teaching and Learning Methods

Before lectures, students follow videos on lecture materials (some resources are mandatory and others are optional), read cases,prepare case discussions and follow some R and data analysis tutorials.

All these activities are followed by short quizzes that are taking into account in the course assessment.

Lectures consist of case discussion, tutorials to practice real-world data analysis skills, games and demonstrations. Tutorials are dedicated to solve statistical written exercises and practice R programming skills.

Evaluation criteria

Different learning activities are set up during the course, and they are assessed according to the following breakdown:

- 20% based on course assignments
- 5% on completion of videos and tutorial quizzes
- 15% team project
- 10% participation in case class discussions
- 20% midterm
- 30% final exam (Midterm discarded if final exam has higher grade, in which case the final exam counts 50% and the midterm counts 0%)

Students are required to attend 80% of classes, including also online classes when it applies. Failing to do so without justified reason will imply a Zero grade in the participation/attendance evaluation item and may lead to suspension from the program.

Students who fail the course during regular evaluation will be allowed ONE re-take of the examination/evaluation. Students that pass any Retake exam should get a **5 by default as a final grade for the course.** If the course is again failed after the retake, students will have to register for the course the following year.

In case of a justified no-show to an exam, the student must inform the corresponding faculty member and the director(s) of the program so that they study the possibility of rescheduling the exam (one possibility being during the “Retake” period). In the meantime, the student will get an “incomplete”, which will be replaced by the actual grade

after the final exam is taken. The "incomplete" will not be reflected on the student's Academic Transcript.

Plagiarism is to use another's work and to present it as one's own without acknowledging the sources in the correct way. All essays, reports or projects handed in by a student must be original work completed by the student. By enrolling at any UPF BSM Master of Science and signing the "Honor Code," students acknowledge that they understand the schools' policy on plagiarism and certify that all course assignments will be their own work, except where indicated by correct referencing. Failing to do so may result in automatic expulsion from the program.

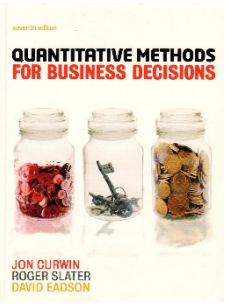
Instructor Roles

Professor: All matters related to the lectures, exams and general issues in the course should be directed to me.

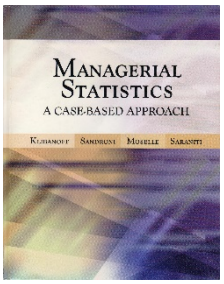
Teaching Assistant: Questions about seminar sessions and grading of assignments should be directed to the teaching assistant.

Reading Materials/ Bibliography/Resources

We will use two textbooks, the first one for the first part of the course, and the second one for the final part of the course.



First part of the course: Quantitative methods for business decisions, by J. Curwin, R. Slater and D. Eadson, seventh edition, CENGAGE Learning



Second part of the course: Managerial Statistics, A Case-based approach, by P. Klibanoff, A. Sandroni, B. Moaselle and B. Saraniti, Thmoson – South-Western

We will use R and R-Studio software. A free-version to install in personal computers is available, see the course E-campus page.

We will manage all assignments and course material through the on-line learning platform, E-Campus.

Bio of Professor

Walter Garcia-Fontes joined the Department of Economics and Business after getting his Ph.D. in Economics at Stanford Universtiy (1992). He is currently de Dean of Undergraduate Studies at the School of Economics and Business of Universitat Pompeu Fabra. His research interests are in industrial organization, corporate innovation, technological change, applied econometrics and the economics of education. He has published his research in leading international field journals. He has coordinated various projects in different European Commission Framework Programmes, studying the European chemical industry and the organizational changes related to new industrial relations.