



UNIVERSITÀ DEGLI STUDI DI PALERMO

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| DEPARTMENT | Scienze Economiche, Aziendali e Statistiche | | |
| ACADEMIC YEAR | 2020/2021 | | |
| BACHELOR'S DEGREE (BSC) | ECONOMICS AND FINANCE | | |
| INTEGRATED COURSE | COMPUTING SKILLS - INTEGRATED COURSE | | |
| CODE | 21346 | | |
| MODULES | Yes | | |
| NUMBER OF MODULES | 2 | | |
| SCIENTIFIC SECTOR(S) | | | |
| HEAD PROFESSOR(S) | CIPOLLINI ANDREA | Professore Ordinario | Univ. di PALERMO |
| OTHER PROFESSOR(S) | AUGUGLIARO LUIGI | Professore Ordinario | Univ. di PALERMO |
| | CIPOLLINI ANDREA | Professore Ordinario | Univ. di PALERMO |
| CREDITS | 6 | | |
| PROPAEDEUTICAL SUBJECTS | | | |
| MUTUALIZATION | | | |
| YEAR | 1 | | |
| TERM (SEMESTER) | 2° semester | | |
| ATTENDANCE | Not mandatory | | |
| EVALUATION | Pass/Fail | | |
| TEACHER OFFICE HOURS | AUGUGLIARO LUIGI Tuesday 10:00 12:00 Stanza n. 201 - secondo piano CIPOLLINI ANDREA Thursday 9:00 11:00 | | |

DOCENTE: Prof. ANDREA CIPOLLINI

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| PREREQUISITES | No particular knowledge is required |
| LEARNING OUTCOMES | <p>Knowledge and understanding ability</p> <p>The student will know the fundamental principles of an empirical analysis through the application of software to the data.</p> <p>Ability to apply knowledge and understanding The student will be able to organize, manipulate, process and interpret the data to carry out empirical research. He will be able to adequately use the various software support systems (online help, manuals and other sources) to overcome any obstacles encountered in carrying out specific activities. In particular, the knowledge acquired will concern the use of commands to import data, build and interpret graphics and transform and manipulate data, through user-defined functions for empirical analysis</p> <p>Judgment autonomy The student will be able to perform empirical analysis in complete autonomy, using the main R and Stata commands seen during the course.</p> <p>Communication skills The student will be: a) able to use practically what has been learned during the course and to communicate it to any recipients. b) able to use R, Excel and Stata both as software for data analysis</p> |
| ASSESSMENT METHODS | <p>Learning will be assessed through a practical test that tends to verify the student's skills and knowledge in the disciplinary context of the course. The practical test consists of a limited number of problems relating to the R, Excel and Stata software. The skills and knowledge of the test taker are tested through the answers provided in the test and the final grade is formulated on the basis of these. The final mark is the sum of the scores assigned in advance for the complete, partial or non-resolution of each problem administered. In particular, to pass the exam, therefore obtaining a mark of not less than 18/30, the student must demonstrate elementary achievement of the objectives. The objectives achieved are considered elementary when the examinee proves to have acquired a basic knowledge of the topics described in the program, is able to make minimal connections between them, proves to have acquired a limited autonomy of judgment; his language is sufficient to communicate with the examiners. To achieve a score of 30/30 with honors, the student must instead demonstrate that he has achieved the expected objectives in an excellent way. The achieved objectives are considered excellent when the exam student has acquired full knowledge of the topics of the program, proves to be able to apply the knowledge acquired even in advanced contexts with respect to those of teaching, expresses himself with lexical competence also in the field specific language of reference and is able to develop and express independent judgments based on the knowledge acquired.</p> |
| TEACHING METHODS | lectures and classes |

**MODULE
SOFTWARE FOR DATA ANALYSIS 1**

Prof. ANDREA CIPOLLINI

SUGGESTED BIBLIOGRAPHY

- Mineo, A.M., Una guida all'utilizzo dell'ambiente statistico R. Pubblicato nel sito del CRAN (The Comprehensive R Archive Network).
- Advanced R, Second Edition. H. Wickham (2019). CRC Press.

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| AMBIT | 10883-Abilità informatiche e telematiche |
| INDIVIDUAL STUDY (Hrs) | 49 |
| COURSE ACTIVITY (Hrs) | 26 |

EDUCATIONAL OBJECTIVES OF THE MODULE

The course has as its fundamental objective to offer the student the tools to be able to use the statistical programming environment R consciously. At the end of the course the student must be able to use the main commands of the R software, import data and extract subsets of them .

SYLLABUS

| Hrs | Frontal teaching |
|------------|----------------------------|
| 2 | Intro to programming in R |
| 4 | R and vectors |
| 4 | Arrays and matrices in R |
| 2 | Reading and importing data |
| 2 | Graphs and R |
| 2 | Graphs in R |

| Hrs | Practice |
|------------|---|
| 4 | Handling of the basic objects of R |
| 2 | Reading file |
| 2 | calling functions, graphs and optima solution computation |

**MODULE
SOFTWARE FOR DATA ANALYSIS 2**

Prof. LUIGI AUGUGLIARO

SUGGESTED BIBLIOGRAPHY

Acock, A.C. (2018), *A Gentle Introduction to Stata* (Sixth Edition), Stata Press, College Station (Texas).
 Long J.S. (2009), *The Workflow of Data Analysis Using Stata*, Stata Press, College Station (Texas).
 Kohler, U. and Kreuter, F. (2012), *Data Analysis Using Stata* (Third Edition), Stata Press, College Station (Texas).
 Mitchell M.N. (2010), *Data Management Using Stata: A Practical Handbook* (Second Edition), Stata Press, College Station (Texas).
 Altri libri (econometria/statistica di base con Stata):
 Baum C. F. (2006), *An Introduction to Modern Econometrics Using Stata*, Stata Press, College Station (Texas).
 Cameron, A.C., and Trivedi, P.K. (2009), *Microeconometrics Using Stata*, Stata Press, College Station (Texas).
 Rabe-Hesketh, S., and Everitt, B. (2004), *A Handbook of Statistical Analyses using Stata* (Third Edition), CRC Press LLC, Florida.

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EDUCATIONAL OBJECTIVES OF THE MODULE

The course has as its fundamental objective to offer the student the basic tools to carry out an empirical research with the Stata software in complete autonomy.

SYLLABUS

| Hrs | Frontal teaching |
|-----|--|
| 2 | Intro to Excel |
| 2 | Reading and Data handling in Excel |
| 2 | Financial Functions in Excel |
| 2 | Intro to Stata; Reading, writing and interpreting data; Organizing and data cleaning; Creating new variables |
| 2 | Tables |
| 2 | Combining, add and remodelling data |
| 2 | Local and global macro, loop |
| 2 | Vectors and Matrices (Stata and Mata) |
| Hrs | Practice |
| 10 | Application of Excel software to financial data. Empirical applications: data from the survey on the financial statements of Italian households (SHIW - Bank of Italy), EconLav "a micro-simulation model for the tax and benefit system" (ISFOL), data from the SHARE survey (Survey of Health , Aging and Retirement in Europe), a Stata procedure for online written exams (UNIPA, DSEAS, Political Economy). |