



Academic Year 2021-2022

Syllabus

Statistical tools for decision making

CFU 9

Prof. Leonardo Emberti Gialloreti

### Course Description

The course provides the basics of descriptive statistics and statistical inference, highlighting the potential applications in political, economic and social sciences.

### Teaching Method

Classroom teaching, exercises, discussion of case studies.

### Schedule of Topics

<b>Topic 1</b>	Univariate descriptive statistics: types of data; graphical representations; means; variability.
<b>Topic 2</b>	Bivariate descriptive statistics: contingency; correlation; simple linear regression.
<b>Topic 3</b>	Probability: elementary probability rules; random variables; common families of distributions; sampling distributions.
<b>Topic 4</b>	Statistical inference: point estimation; confidence intervals; statistical tests about hypotheses; multiple linear regression.

### Textbook and Materials

#### Textbook

Alan Agresti, Christine Franklin, "Statistics: The Art and Science of Learning From Data"  
Pearson; 4th International Edition, ISBN 9781447964186.

#### Additional required readings

Steven Sloman, Philip Fernbach, "The Knowledge Illusion. Why we never think alone".  
Penguin Publishing, 2017.

Leo Tolstoy, "War & Peace". (This novel can be read either in English or in any other language. Only the "Epilogue, Second part" is a compulsory reading; however, the reading of the whole novel is highly recommended).

### Assessment

The final (oral) exam consists of theoretical questions and of the discussion of a (written) critical review produced by the student. The topic of the review will be assigned to each student during the course. Non-attending students will not need to produce and discuss a critical review, but their final exam will be (see below), covering all the topics of the course.

### MIDTERM EXAM

There will be one elective midterm (written) exam, consisting of theoretical questions and exercises. It is highly recommended to attend the midterm exam. The final grade will be the average of the two grades obtained in the midterm and final exam (or of the oral exam for students who failed or did not attend the midterm exam).

The final exam will be ONLY and EXCLUSIVELY ORAL. The syllabus will be changed in the next few days to reflect this. The final exam will not have any written part, not for those who have done the midterm, nor for those who have not done the midterm. Those who have done the midterm will be examined ORALLY only on the second part of the program, the one after the midterm. Those who have NOT passed the midterm will have an ORAL exam on the whole program, with a longer oral than the ones who have passed the midterm, and only in the second round. Nevertheless, in both cases the oral exam may also see some short formula written on a piece of paper, WHILE DISCUSSING WITH THE EXAMINER.

If you wish to do the exam as non attending student (less than 80% of presence and no midterm done) you can choose when to enroll, in the first and/or the second, on the whole program. If you are an attending student (more than 80% of presence and no midterm done) you can only do the second round, on the whole program. The oral will be in presence unless rules change at the University level for Covid-related reasons.

**Office hours**

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By appointment.

**NOTE:** Since the course is provided for a limited number of students, **Erasmus or non Global Governance students** who would like to attend the course need to contact the Secretariat of Global Governance by e-mail [global.governance@uniroma2.it](mailto:global.governance@uniroma2.it) for registration and inform the Professor of the course. They are required to sign a code of conduct like all Global Governance students, accepting all values and rules. Please read it carefully before enrolling and notice that attendance is required from the very first lesson.