

## STA2023 Using R

### Introduction:

Statistics is the branch of mathematics that deals with the study of data or numerical facts. It includes the collection, presentation, analysis and interpretation of data. Statistics, based on the mathematical theories of probability, makes inferences about entire populations of the subject of study by analyzing relatively small samples of those subjects.

Most students relate to statistics as a mathematics centered in the use of formulas, tables and calculations. Too much attention is put on those calculations, that the instructor and the student neglect the most important part: analysis and interpretation of results.

By using R statistical software in this course, we should be able to stress the interpretation and analysis of statistical procedures and tests, rather than calculations and formulas.

R is an open source software. R has no graphical interface; it has no buttons to click and no dropdown menus. R works by typing commands into a text interface that begins with a prompt >. We will interact with R using a graphical platform RStudio as a graphical front-end to R.

Students have access to a computer during lectures and examinations. Students do not need to memorize R instructions or code. However, notes related to interpretation of statistical results will not be available during exams.

Our main concern is learning Statistics, while R is a tool. Nevertheless, during this semester course the student should become familiar with R functions and procedures.

Statistics is an exciting discipline that allows us to draw meaningful inferences, insight and understanding from raw data. The instructor hopes students, aside of adding three credits to their academic records, will enjoy the flexibility, creativity and beauty of a powerful Statistical software like R.

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Installing R and R Studio:

You can download R from CRAN, The Comprehensive R Archive Network, at <https://cran.r-project.org/>;  
Then, download RStudio from the RStudio website: <https://rstudio.com/products/rstudio/>

R Studio is also available online at <https://rstudio.cloud/> in this case there is no need of installing R and R Studio in a local computer. Simply login using an existing Gmail account or sign up for a new account.