



UNIVERSITÀ
degli STUDI
di CATANIA

DEPARTMENT OF GENERAL SURGERY AND MEDICAL-
SURGICAL SPECIALTIES
Bachelor's Degree in Cardiocirculatory and Cardiovascular
Perfusion techniques
Academic Year 2019/2020 - 1° Year

FISICA APPLICATA STATISTICA MEDICA ED INFORMATICA

11 CFU - 1° Semester

Teaching Staff

ALESSANDRO RIDOLFO - Module FISICA APPLICATA - FIS/07 - 5 CFU

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Office: Dipartimento di Fisica e Astronomia, stanza 109 (primo piano)

Office Hours: Mercoledì dalle 11:00 alle 13:00. Gli studenti sono cordialmente invitati a contattare il docente via email al fine di garantire una migliore organizzazione

MASSIMO COSTANZO - Module STATISTICS - MED/01 - 3 CFU

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MARIO MASSIMILIANO SALFI - Module INFORMATICA - INF/01 - 3 CFU

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LEARNING OBJECTIVES

▪ STATISTICS

Method of teaching course:

Lectures, active participation of students through questions, preparation of a questionnaire for data collection and subsequent data collection and exercises.

COURSE STRUCTURE

▪ STATISTICS

VALUTATION: Writing and oral exam

DETAILED COURSE CONTENT

▪ STATISTICS

1. Brief introduction to epistemology of knowledge
2. Scientific use
3. Types of measurement scales: nominal, ordinal, interval and ratio scales
4. Representation of data in graphs and tables
5. Central indicators, variability indicators, asymmetry and kurtosis
6. Probability, sum and product principle
7. Probability application
8. Diagnostic tests: sensitivity, specificity, predictive values
9. Relative risk and odds ratio
10. Probability distributions: binomial, Poisson and normal
11. Standardized Gaussian curve
12. Inference: central limit theorem, sample distribution of the mean and standard error
13. Confidence interval for the mean and variance
14. Hypothesis test: null and alternative hypotheses
15. Significance tests between two groups: Student t test for dependent and independent groups
16. Contingency tables and chi square test
17. Brief description of linear correlation and regression

TEXTBOOK INFORMATION

▪ STATISTICS

- Lantieri, B.L., Risso D., Ravera G. (revisione Lama N., Signoriello G.) (2007). *Elementi di Statistica Medica*. Milano: McGraw-Hill.
- Chiari, Mosci, Naldi, *Evidence based clinical practice - La pratica clinico assistenziale basata su prove di efficacia* - McGraw-Hill
- Costanzo M. R. (2019). *“Statistica sperimentale per le professioni sanitarie”*, Createspace by Amazon
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