



UNIVERSITÀ
degli STUDI
di CATANIA

DEPARTMENT OF GENERAL SURGERY AND MEDICAL-
SURGICAL SPECIALTIES
Bachelor's Degree in Cardiocirculatory and Cardiovascular
Perfusion techniques
Academic Year 2018/2019 - 1° Year

FISICA APPLICATA STATISTICA MEDICA E INFORMATICA

11 CFU - 1° Semester

Teaching Staff

ALESSANDRO RIDOLFO - Module FISICA APPLICATA - FIS/07 - 4 CFU

Email: alessandro.ridolfo@ct.infn.it

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 STATISTICA MEDICA - MED/01 - 3 CFU

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Office Hours: DA CONCORDARE

MARIO MASSIMILIANO SALFI - Module Computer science - INF/01 - 4 CFU

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LEARNING OBJECTIVES

▪ Computer science

This course provides the basic theoretical knowledge about the use of a computer, hardware and software, about the applications of informatics in health care settings, as well as providing practical knowledge on the use of an operative system and of the office suite (Word, Excel, Powerpoint, Access).

COURSE STRUCTURE

▪ Computer science

Theoretical lessons and computer exercises on html, Word, Excel, Powerpoint and Access.

DETAILED COURSE CONTENT

▪ STATISTICA MEDICA

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. Probabiloity 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: Sudent t test for dependent and independent groups
16. Contingency tables and chi square test
 17. Brief description of linear correlation and regression
 18. Non parametric-tests
 19. Scientific paper

▪ Computer science

1. Introduction to computer science.
2. Encoding and representation of information.
3. Architecture of computer.
4. The operating system and application software.
5. Computer networks and the internet.
6. Introduction to databases.
7. Elements of medical informatics.
8. Word processors: Microsoft Word.
9. Spreadsheets: Microsoft Excel.
10. Databases: Microsoft Access.
11. Presentation programs: Microsoft PowerPoint.

TEXTBOOK INFORMATION

▪ STATISTICA MEDICA

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Colton T (1991) Statistica Medica. Piccin: Padova.

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Armitage P, Berry G (1996) Statistica Medica - Metodi statistici per la ricerca in medicina.
McGraw-Hill Libri Italia srl: Milano

◦

M. R. Costanzo, (2018). "Statistica sperimentale per le professioni sanitarie", Createspace by Amazon

▪ Computer science

Teacher's slides and any ECDL books.
