



# UNIVERSITÀ degli STUDI MAGNA GRÆCIA di Catanzaro

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DIGES

## MASTER'S DEGREE PROGRAMME IN HEALTHCARE MANAGEMENT

ACADEMIC YEAR: 2026-2027

COURSE TITLE: Preliminary Exam of Statistics

| Course Outline                 |                             |
|--------------------------------|-----------------------------|
| Year of study                  | 2026/2027                   |
| Teaching period                |                             |
| University credits (CFU/ECTS): | 5                           |
| SSD                            | Stat 01/A                   |
| Language                       | The exam will be in English |

| Lecturer      |                        |
|---------------|------------------------|
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| Teaching organization |  |
|-----------------------|--|
| CFU/ETCS              |  |
| 5                     |  |

|                     |                                                                                                                                                                                       |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Learning objectives | Basic knowledge of descriptive statistical methods and probability theory.                                                                                                            |
| Prerequisites       | No prior knowledge is required beyond that needed for admission to the degree programme. In order to facilitate understanding of the lectures, students are advised to fill any gaps. |

|                  |                  |
|------------------|------------------|
| Teaching methods | Individual study |
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| <p>Expected learning outcomes</p> <p>DD1 Knowledge and understanding</p> <p>DD2 Applying knowledge and understanding</p> <p>DD3–5 Transferable skills</p> | <p>DD1 Knowledge of basic statistical concepts, probability, descriptive statistics.</p> <p>DD2 Ability to apply basic statistical methods to analyse and interpret evidence.</p> <p>DD3-5</p> <p>Ability to select and evaluate appropriate descriptive statistical methods and results.</p> <p>Ability to clearly communicate results using appropriate terminology and graphical representations.</p> <p>Ability to independently learn new knowledge about evidence-base science.</p>                                                                                                                         |
| <p><b>Course content (Syllabus)</b></p>                                                                                                                   | <p>Types of data, tables, variables</p> <p>Absolute, relative, and cumulative frequencies and how to chart them</p> <p>Central position of an observed quantitative variable: mean vs. median</p> <p>Variability of a single quantitative variable</p> <p>Co-variability of two quantitative variables</p> <p>Principles of frequentist probability</p> <p>Joint and conditional probability and Bayes' probability</p> <p>Principal measures of concentration for one and two quantitative variables</p> <p>Principles of statistical testing of null hypotheses</p> <p>Principles of statistical regression</p> |
| <p><b>Recommended reading</b></p>                                                                                                                         | <p>E. Llaudet, K. Imai, Data Analysis for Social Science (Princeton University Press, 2023).</p> <p>Auxilliary slides may be provided</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p><b>Assessment</b></p>                                                                                                                                  | <p>Oral exam</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |