

COURSE OF STUDY: 3-year degree course in “Economics and Business Administration”

ACADEMIC YEAR: 2023-2024

ACADEMIC SUBJECT: *Statistics (Statistica)*

General information	
Year of the course	I
Academic calendar (starting and ending date)	II semester (19/02/24-31/05/24)
Credits (CFU/ETCS):	10
SSD	Statistics, SECS-S/01
Language	Italian
Mode of attendance	Not required

Professor/ Lecturer	
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Department and address	DJSGE Economics Headquarter, Taranto
Virtual room	Teams, with code 1ks1an1
Office Hours (and modalities: e.g., by appointment, on line, etc.)	Tuesday at 14:00-15:00 (by appointment, online)

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours/ Self-study hours
250	80	Within the 80 hours of frontal teaching, in-depth seminars, workshops and exercises are planned, which are to be understood as an integral part of the course.	170
CFU/ETCS			
10	10		

Learning Objectives	Acquisition of theories and techniques of Statistics in its methodological evolution for the purpose of autonomy in carrying out statistical tasks, with particular reference to the following aspects: data collection and classification, statistical distributions and tables, graphical representations, statistical reports, analytical and positional averages, variability and mutability, analytical representation of distributions, relationships between characters, time and territorial series, principles of probability and random variables, sample distributions, estimation and testing of hypotheses.
Course prerequisites	Good knowledge of Mathematics

Teaching strategies	Lectures, internal cycles of in-depth study, exercises, seminars, laboratory activities, project work, Using traditional and electronic blackboard and computer (if necessary, also in blended learning)
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Expected learning outcomes in terms of	
Knowledge and understanding on:	<ul style="list-style-type: none"> ○ Acquisition of descriptive and inferential statistics tools in order to study collective phenomena (especially in the business, economic and financial fields), for the specification of statistical models that can be used for forecasting and decision-making purposes. ○ Knowledge of official statistical sources for the retrieval of data for univariate and multivariate analysis.
Applying knowledge and understanding on:	<ul style="list-style-type: none"> ○ Plan a statistical survey, collect data, store it in databases, process it and present the results obtained. ○ Reading and evaluation of the metadata that accompany the statistical sources. ○ Perception of collective phenomena and their explanation through the statistical method.
Soft skills	<ul style="list-style-type: none"> • <i>Making informed judgments and choices</i> <ul style="list-style-type: none"> ○ Translate the cognitive needs of the collective dynamics in statistical terms. ○ Evaluate the results deriving from the calculation of statistical indicators and definition of the most suitable methods for achieving results. ○ Use the results of the analyzes to formulate interpretative hypotheses, obtain strategic indications, make decisions in conditions of uncertainty. ○ Evaluate the ethical and deontological aspects of the results of an investigation, in order to avoid inappropriate use of statistical information. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Synthesize, interpret and clearly present the results of the statistical analyzes carried out, both to experts in the application context and to specialists in the statistical field. ○ To grasp and define the statistical objective of a study with non-expert interlocutors, however, divulging the results with appropriate technical language. • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Acquisition of theory and technique of Statistics in its continuous methodological evolution. ○ Integration of one's own knowledge of the different realities to be examined, during the various phases of realization of the statistical survey.
Syllabus	
Content knowledge	<p><i>Part I: Descriptive statistics</i></p> <ul style="list-style-type: none"> • <i>Detection and classification of data</i> • <i>Distributions and statistical tables</i> • <i>Graphical presentations</i> • <i>Statistical reports</i> • <i>Analytical and loose means</i> • <i>Variability: dispersion and inequality measures</i> • <i>Normal curve, asymmetry, non-normality</i> • <i>Analytical representation of distributions</i> • <i>Relations between characters: independence, dependence, interdependence</i> • <i>Temporal series: identification of the components</i>

	<ul style="list-style-type: none"> • <i>Territorial series</i> <p><i>Part II: Probability and Inference</i></p> <ul style="list-style-type: none"> • <i>Principles of probability and main random variables</i> • <i>Logic and technical of inference</i> • <i>Sample distribution</i> • <i>Estimates and confidence intervals</i> • <i>Hypotheses testing with one sample</i>
Texts and readings	<p><i>G. Girone, C. Crocetta, A. Massari. Statistica. Ed. Cacucci. Bari, 2019</i></p> <p><i>F. Delvecchio. Statistica per lo studio dei fenomeni sociali. Ed. Cleup. Padova, 2015</i></p> <p><i>D. Viola, P. Iaquineta. Esercizi di statistica. Ed. Cacucci. Bari, 2016</i></p>
Notes, additional materials	<i>Any other text with a similar index and same "Content knowledge" is fine</i>
Repository	<i>Available in the DJSGE Economics Library and in Teams</i>

Assessment	
Assessment methods	<i>Exam aimed at ascertaining the expected learning outcomes (at least in most of them in order to achieve sufficiency): written (lasting about an hour and a half) with multiple choice test, and then possibly (at the student's discretion) oral to modify (even downwards) the grade of the written exam</i>
Assessment criteria	<ul style="list-style-type: none"> • <i>Knowledge and understanding</i> <ul style="list-style-type: none"> ○ Detect data on statistical units: design and prepare the data collection questionnaire • <i>Applying knowledge and understanding</i> <ul style="list-style-type: none"> ○ Organize and adequately assess qualitative and quantitative information on the data source • <i>Autonomy of judgment</i> <ul style="list-style-type: none"> ○ Evaluate the aims of statistical research, organizing the phases of the preparative analysis according to time and space available. • <i>Communicating knowledge and understanding</i> <ul style="list-style-type: none"> ○ Use and decode statistical language • <i>Communication skills</i> <ul style="list-style-type: none"> ○ Autonomy in statistical disclosure, being guided by data • <i>Capacities to continue learning</i> <ul style="list-style-type: none"> ○ Develop entrepreneurship and initiative
Final exam and grading criteria	<i>During the written examination, the Commission will assign 30 theoretical and practical questions and will attribute: 1 point to each correct answer, -0.33 (negative) to each wrong answer, 0 to the missing ones. Therefore, the evaluation is out of thirty and the exam is passed when the total score is greater than or equal to 18.</i>
Further information	
	Learn to be autonomous in carrying out one's duties