UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Economiche, Aziendali e Statistiche
ACADEMIC YEAR	2021/2022
BACHELOR'S DEGREE (BSC)	ECONOMICS AND BUSINESS ADMINISTRATION
SUBJECT	STATISTICS
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50063-Statistico-matematico
CODE	06644
SCIENTIFIC SECTOR(S)	SECS-S/01
HEAD PROFESSOR(S)	AGRO' GIANNA Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	100
COURSE ACTIVITY (Hrs)	50
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	2
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**AGRO' GIANNA** Monday 11:00 12:00 solo per AGRIGENTO sala dei professori piano terra villa Genuardi Tuesday 12:00 13:30 stanza 107. 1°piano edificio 13 Wednesday 12:00 13:30 stanza 107. 1°piano edificio 13 Friday 17:00 18:00 solo per AGRIGENTO sala dei professori piano terra villa Genuardi

DOCENTE: Prof.ssa GIANNA AGRO'

PREREQUISITES	Math topics :univariate and multivariate functions; determination of the max-min of a function . Linear and exponential model. Linear combination of variables.
LEARNING OUTCOMES	Knowledge and understanding. Knowledge of the main statistical methods and procedures for descriptive and inferential analysis of economic and business-related data. Applying knowledge and understanding Understanding how and when statistics is useful to provide answers and make decisions appropriately. Making judgments The student should after the course, be able to formalize a cognitive problem given the most appropriate statistical procedure in order to reach conclusions and provide the answer to the problem posed. communication skills The student would be able to present the problem, justify the methodological choices and provide the results of the statistical analysis using appropriate language. Learning ability The student must have developed the learning skills needed to address new problems finding different methodologies to those learned in the classroom.
ASSESSMENT METHODS	Written test (2 hours): 4 exercises each with 3 questions to be reasoned response and reporting the summary of the progress. The assessment is carried out of thirty. Rejected: Not sufficient 18: Just sufficient 19-21: Fully sufficient / More than sufficent 22-24: Fairly good 25-27: Good 28-29: Very good 30: Excellent 30 e lode: Excellent cum laude Oral exam (optional) which you have access only after passing the written test (at least 18/30) . The assessment is carried out of thirty. The final grade will be the average of the two votes, or only the written test. Evaluation of the written exam: examinee's knowledge is tested through the answers to the questions; in particular 1) the understanding of the problem that can rise in the economic - mamagement context; 2) information (data) available, 3) the choice of methods learned for the processing of the data, 4) the proper conduct, and 5) the formulation of the answer (solution) to the problem. Each exercise is worth 7.5 points (2.5 x3 questions) and questions are formulated in such a way as to allow even a partial solution. Evaluation of the oral test: at least three questions are asked and the answer is evaluated on the basis of 1) the understanding of the application 3) the ability to express in a punctual response, 3) the mathematical-statistical language properties 4) the understanding of the method or the problem referred to.
EDUCATIONAL OBJECTIVES	Knowledge of the main methods for the study of collective phenomena from a point of view both descriptive that inferential . The ability to use different statistical analysis techniques in the context of business problems in decision-making or descriptive purposes.
TEACHING METHODS	Front lessons and classroom exercises
SUGGESTED BIBLIOGRAPHY	Borra, Di Ciaccio, Statistica, Pearson Ed Levine D.M. et al. Statistica , Pearson Ed Cicchitelli G. Statistica principi e metodi, Pearson Ed S. Ross, Calcolo delle probabilita, Pearson Ed

SYLLABUS

Hrs	Frontal teaching
14	Descriptive statistics: collective phenomena , types of observable variables , data collection. Indices : the modal value, the average and the median ; the standard deviation and the coefficient of variation . The tables of frequencies for variables.. The different graphical representations. Concentration measurement for transferable variables.
6	Elements of probability : definitions and importance of probability . Rules for the calculation of the probability of simple and compound events. Conditional probability: definition and application.
8	Definition of the discrete and continuos random variable. Probability distribution and probability density. Expected value and variance. The Binomial variable. The Gaussian variable.
12	Interdependence between variables and covariance. The simple linear regression : Pearson index, scatter plot , best fit line and the least squares method . Index determination and significance of the regression coefficient .

Hrs	Practice
4	Organization of data in tables and graphical representations. Location and variability indices. Concentration meaning and measurement.

Hrs	Practice
4	Calculation of the probability of simple and compound events . Discrete random variable: examples and calculation of the expected value and variance Calculation of the probability of simple and compound events . Discrete random variable: examples and calculation of the expected value and variance . The continuous random variable called Normale : examples for the probability of events and for the identification of the percentiles.
4	The dual variable and covariance . exercises on linear interdependence and Pearson index . The scatter plot and the best fit line of least squares coefficients