



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Agrarie, Alimentari e Forestali		
ACADEMIC YEAR	2021/2022		
BACHELOR'S DEGREE (BSC)	AGRI-FOOD SCIENCES AND TECHNOLOGIES		
SUBJECT	PRINCIPLES OF STATISTICS FOR THE AGRI-FOOD INDUSTRY		
TYPE OF EDUCATIONAL ACTIVITY	D		
AMBIT	10522-A scelta dello studente		
CODE	21787		
SCIENTIFIC SECTOR(S)	SECS-S/02		
HEAD PROFESSOR(S)	BARONE STEFANO	Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)			
CREDITS	4		
INDIVIDUAL STUDY (Hrs)	60		
COURSE ACTIVITY (Hrs)	40		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	2		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	<p>BARONE STEFANO</p> <p>Monday 11:00 13:00 Aula M - presso il Dipartimento di scienze agrarie, alimentari e forestali, viale delle scienze, Palermo, edificio 4, sezione Coltivazioni Arboree. Piano terra.</p> <p>Wednesday 11:00 13:00 Aula M - presso il Dipartimento di scienze agrarie, alimentari e forestali, viale delle scienze, Palermo, edificio 4, sezione Coltivazioni Arboree. Piano terra.</p>		

DOCENTE: Prof. STEFANO BARONE

PREREQUISITES	There are no specific prerequisites, but it may be helpful to have a good knowledge of high school math.
LEARNING OUTCOMES	<p>Knowledge and understanding. Acquisition of knowledge related to statistics and data analysis.</p> <p>Ability to apply knowledge and understanding. Ability to apply and translate the knowledge acquired to the context of the agri-food sector.</p> <p>Autonomy of judgment. Being able to problematize the themes and concepts proposed by expressing pertinent judgments and providing possible interpretations to the phenomena analyzed.</p> <p>Communication skills. Ability to use specialist language and to present the results of case study analyzes in a relevant way.</p> <p>Learning skills. Ability to update independently through the consultation of texts and publications of the sector and to follow, starting from the knowledge acquired, in-depth courses and specialized seminars.</p>
ASSESSMENT METHODS	<p>The assessment of learning will take place through:</p> <ul style="list-style-type: none"> • Written test on the first two modules • Oral exam on the third and fourth modules <p>Criteria adopted for the evaluation</p> <p>In order to pass the written test, the student must achieve a minimum result that will be communicated during the course. The oral test (if the written test is passed) will be chosen by the student or the teacher.</p>
EDUCATIONAL OBJECTIVES	At the end of the course, the student will have to have knowledge of the basic tools of statistics, of the calculation of probabilities and in general of the scientific method of approach to real problems. Furthermore, the student must be able to statistically analyze a dataset. The course will be based on raising students' awareness of the data analysis problems that arise in the agri-food sector.
TEACHING METHODS	Lessons and exercises
SUGGESTED BIBLIOGRAPHY	Dispense fornite dal docente (non esaustive per lo studio della materia) accompagnate da un qualunque libro di "Probabilità e Statistica" di livello universitario, scritto in italiano da un autore italiano.

SYLLABUS

Hrs	Frontal teaching
4	Types and representations of statistical surveys. Frequency distribution. Histogram. Position indices: mean, fashion and median. Box-wiskers plot. Dispersion indices. Form measurements. Asymmetry and kurtosis indices.
4	Introductory concepts, event and probability definitions. Classic, frequentist and subjectivist approach. Calculation rules. Sample space. Union and intersection of events. Incompatible events. Partition of a sample space. Conditional probability. Stochastic independence. Bayes rule. Bayes theorem. Basics of combinatorics.
4	General concepts and models of discrete random variables: Bernoulli, Binomial, Poisson. General concepts and models of continuous random variables: Normal, Exponential, Uniform. Distributions conjunctions, double distributions: main definitions. Stochastic independence of random variables. Value expected and variance of the sum of v.a. s-independent.
4	Statistical models. Random error. Linear regression model. Simple linear regression. Least squares method. Goodness of fitting. Coefficient of determination. Residue analysis.
Hrs	Practice
6	Exploratory Analysis
6	Probability calculation
6	Random variables
6	Regression