Syllabus

Descrizione corso

Titolo insegnamento	Preparatory Course in Mathematics
Codice insegnamento	99999
Titolo aggiuntivo	
Settore Scientifico-Disciplinare	STAT-04/A
Lingua	Inglese
Corso di Studio	Corso di laurea in Economia e Management
Altri Corsi di Studio (mutuati)	Bachelor in Economics, Politics and Ethics
Docenti	dr. Luciano Marzufero, Luciano.Marzufero@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/49853
Assistente	
Semestre	Non definito
Anno/i di corso	1
CFU	0
Ore didattica frontale	20
Ore di laboratorio	-
Ore di studio individuale	-
Ore di ricevimento previste	
Sintesi contenuti	The course refers to the educational activities chosen by the student and belongs to the scientific area of Statistics-Mathematics. The course gives a general overview of scientific contents. Precalculus Mathematics is reviewed which prepares for the Mathematics for Economists course.
Argomenti dell'insegnamento	• Sets: explanation, representation/notation, elements/subsets, unions, intersections, a few rules, Cartesian product.

	• Functions: general definitions, examples, real functions as important special case. • Very brief re-introduction of natural numbers, integers, rational and real numbers with basic arithmetic rules, percentages. Manipulating algebraic expressions, factoring out and expanding, manipulating fractions, polynomials. • Absolute values, powers and roots, exponentials, logarithms: definition, computation, rules. • Real functions: tables of values and graphical representation, absolute value function, polynomial (linear, higher degrees) and power functions, exponential and logarithmic functions. • Solving linear equations with one variable, a complete case study of quadratic equations including graphs, equations which can be solved via taking logarithms. • Solving two linear equations with two variables simultaneously, cases with none, one and infinitely many solutions, graphical interpretation as intersection of lines. • Solving inequalities (optional): linear inequalities in one and two variables, inequalities involving absolute values in one variable. • Definition of factorials and permutations, binomial coefficients, Pascal's triangle and combinations.
Parole chiave	Precourse; mathematics
Prerequisiti	none
Insegnamenti propedeutici	none
Modalità di insegnamento	lectures
Obbligo di frequenza	not mandatory, but suggested
Obiettivi formativi specifici e risultati di apprendimento attesi	Educational objectives: (1) Refresh mathematical knowledge taught in high school, fill gaps and add a few new insights. (2) Motivate to experience and communicate (about) Mathematics. (3) Introduce mathematical vocabulary in English which is the language of the Mathematics for Economists course.
Obiettivi formativi specifici e risultati di apprendimento attesi (ulteriori info.)	Knowledge and understanding Basic mathematical knowledge will be revised and consolidated, familiarity with elementary solution procedures (e.g. for quadratic equations) will be generated.

	Applying knowledge and understanding By elementary examples from economic theory, a basic understanding for the necessity of mathematical modeling in economics is aimed for. Making judgments The ability to make fundamental distinctions in Mathematics (linear vs. nonlinear, first order vs. higher order etc.) is aimed for. Communication skills Basic abilities to apply a mathematical language in an economical framework will be aimed for. The students will be challenged to talk to the professor and to each other about mathematical constructions. Mathematical vocabulary in English is introduced and/or reviewed. Learning skills Prepares for the Mathematics for Economists and Mathematics for EPE courses which require a solid understanding of mathematical concepts
Modalità di esame	Written final test on Friday 26.09.2025 – evaluation to be announced by the professor
Criteri di valutazione	
Bibliografia obbligatoria	
Bibliografia facoltativa	
Altre informazioni	
Obiettivi di Sviluppo Sostenibile (SDGs)	Istruzione di qualità, Ridurre le disuguaglianze, Buona occupazione e crescita economica, Parità di genere