Syllabus

Kursbeschreibung

Titel der Lehrveranstaltung	Preparatory Course in Mathematics
Code der Lehrveranstaltung	99999
Zusätzlicher Titel der Lehrveranstaltung	
Wissenschaftlich-disziplinärer Bereich	STAT-04/A
Sprache	Englisch
Studiengang	Bachelor in Wirtschaftswissenschaften und Betriebsführung
Andere Studiengänge (gem. Lehrveranstaltung)	Bachelor in Economics, Politics and Ethics
Dozenten/Dozentinnen	dr. Luciano Marzufero, Luciano.Marzufero@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/49853
Wissensch. Mitarbeiter/Mitarbeiterin	
Semester	Nicht definiert
Studienjahr/e	1
KP	0
Vorlesungsstunden	20
Laboratoriumsstunden	-
Stunden für individuelles Studium	-
Vorgesehene Sprechzeiten	
Inhaltsangabe	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.

Themen der Lehrveranstaltung	• 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.
Stichwörter	Precourse; mathematics
Empfohlene Voraussetzungen	none
Propädeutische Lehrveranstaltungen	none
Unterrichtsform	lectures
Anwesenheitspflicht	not mandatory, but suggested
Spezifische Bildungsziele und erwartete Lernergebnisse	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.
Spezifisches Bildungsziel	Knowledge and understanding

und erwartete Lernergebnisse (zusätzliche Informationen)	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
Art der Prüfung	Written final test on Friday 26.09.2025 – evaluation to be announced by the professor
Bewertungskriterien	
Pflichtliteratur	
Weiterführende Literatur	
Weitere Informationen	
Ziele für nachhaltige Entwicklung (SDGs)	Hochwertige Bildung, Weniger Ungleichheiten, Menschenwürdige Arbeit und Wirtschaftswachstum, Geschlechter-Gleichheit