Freie Universität Bozen
Libera Università di Bolzano
Università Liedia de Bulsan

Syllabus
Course description

Course title	Preparatory course in Mathematics – Mathematics for Economists TSE
Course code	30152
Scientific sector	SECS-S/06
Degree	Tourism, Sport and Event Management
Semester and academic year	26.09.2022 – 10.10.2022
Year	1st year
Credits	-
Modular	No

Total lecturing hours	30
Total lab hours	-
Total exercise hours	-
Attendance	recommended, but not required
Prerequisites	not required
Course page	https://www.unibz.it/en/faculties/economics-management/bachelor-tourism-sport-event-management/course-offering/?academicYear=2022

Specific educational objectives	The course refers to the educational activities chosen by the student and belongs to the scientific area of Statistic - Mathematic and is directed to 1st year students preparing for the Mathematics for Economists course. The course has two parts. In the first part of 20 hours, pre-calculus mathematics is revised with a focus on elementary calculative skills and basic mathematical language for the Mathematics for Economists course is prepared including a discussion of sets, abstract functions, elementary combinatorial concepts and geometry in the plane. The second part of 10 hours is devoted to special tutoring of students who have deficits in Mathematics and therefore difficulties to follow the lecture Mathematics in Economics. They will be identified using (self)tests. 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.

Lecturer	Prof. Dr. rer. nat. habil. Andreas Hamel

	E-mail: Andreas.Hamel@unibz.it, Phone: 0474 013651 Campus Bruneck- Brunico, 1st Floor, Room 1.11; https://www.unibz.it/en/faculties/economics-management/academic-staff/person/33708-andreas-heinrich-hamel
Scientific sector of the lecturer	SECS-S/06
Teaching language	English
Office hours	https://www.unibz.it/en/timetable/?department=26&degree=13009%2C13134
Lecturing assistant	-
Teaching assistant	-
Office hours	-
List of topics covered	First part: - sets and set calculus, number systems, arithmetic rules for fractions, polynomials, powers, logarithms; - introduction of sum and product signs as well as factorials, - basic combinatorics (permutations, combinations, Pascal triangle). - solving linear and quadratic equations as well as inequalities for one and two variables; - investigating and graphing elementary real functions including quadratic, exponential and absolute value functions. - expanding and factorizing algebraic expressions. - solving systems of linear inequalities in two variables analytically and graphically. Second part: topics depend on the need of the students identified via (self) tests.
Teaching format	Lectures and moderated discussions.

Learning outcomes	**Knowledge and understanding**: Basic mathematical knowledge will be revised and consolidated, familiarity with elementary solution procedures (e.g. for quadratic equations or finding the equation of a straight line) 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. Moreover, a first intuition for quantitative vs. qualitative models should be provided.

	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. **Learning skills**: Prepares for the Mathematics for Economists course which requires a solid understanding of mathematical concepts.

Assessment	Informal assessment: tests at the beginning and at the end.
Assessment language	English
Evaluation criteria and criteria for awarding marks	No marks/grades.

Required readings	No required reading.
Supplementary readings	Will be announced at the beginning of the course.