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	23.09 – 27.09.2024
Year	1st year
Credits	-
Modular	No

Total lecturing hours	20
Total lab hours	-
Total exercise hours	-
Attendance	recommended, but not required
Prerequisites	not required
Course page	https://www.unibz.it/it/faculties/economics-management/bachelor-tourism-sport-event-management/course-offering/?academicYear=2024

Specific educational objectives	The course refers to the educational activities chosen by the student and belongs to the scientific area of Statistics-Mathematics. It is directed towards 1st year students and has two broad objectives: 1) Refresh mathematical knowledge 2) Prepare for the course "Mathematics for Economists"

Lecturer	Dr. Benjamin Weißing E-mail: Benjamin.Weissing@unibz.it Campus Bruneck- Brunico, 1st Floor, Room 1.11; https://www.unibz.it/it/faculties/economics-management/academic-staff/person/35796-benjamin-weissing
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	-

List of topics covered	• Sets & Operations on Sets
	• Functions
	• Numbers
	   o Natural numbers
	   o Real number

	• Combinatorics
	• Polynomials
	    ○ Expanding and factorizing algebraic expressions
	• Equations & Inequalities
	    ○ Solving linear and quadratic functions
	• Visualisation of Functions (plotting graphs)
	    ○ Sketching graphs of elementary real functions like absolute value, quadratic and exponential functions
	    ○ Solving systems of linear inequalities in two variables graphically

Teaching format	Lectures and moderated discussions.

Learning outcomes	**Knowledge and understanding**: Basic mathematical knowledge will be revisited and consolidated, familiarity with elementary solution procedures (e.g., for quadratic equations or defining an equation for a straight line) will be generated. **Applying knowledge and understanding**: With 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 discuss with the professor and among each other about mathematical constructions. **Learning skills**: Prepares for the course "Mathematics for Economists" requiring a solid understanding of mathematical concepts.

Assessment	Informal assessment: tests at the beginning and at the end of the course
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.