Fakultät für Ingenieurwesen
Facoltà di Ingegneria
Faculty of Engineering

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COURSE DESCRIPTION – ACADEMIC YEAR 2025/2026

Course title	**Mathematics**
Course code	42600
Scientific sector	MATH/04
Degree	Professional Bachelor in Wood Technology (L- P03)
Semester	1
Year	1
Credits	5
Modular	No

Total lecturing hours	50
Total lab hours	-
Attendance	Attendance is not compulsory but recommended.
Prerequisites	Strong mathematical basis.
Course page	Microsoft Teams and https://ole.unibz.it/

Specific educational objectives	The course aims at reinforcing and deepen the mathematical skills acquired by students in the high school, from the theoretical and practical points of view. In particular, the focus is given to the concepts of equation and function, the main notions from differential and integral calculus, an introduction to differential equations and the basis of linear algebra.

Lecturer	Dr. Ivano Colombaro
Contact	Room B1.5.12 email: ivano.colombaro@unibz.it phone: +39 0471 017943
Scientific sector of lecturer	MATH/04
Teaching language	English
Office hours	By appointment, to arrange beforehand via email.
Lecturing Assistant (if any)	
Contact LA	
Office hours LA	
List of topics	• Functions: domain, range, inverse. • Derivatives. • Integrals. • Function analysis. • Differential equations. • Linear algebra.

Teaching format	Lecture-based teaching.

Learning outcomes	**Intended Learning Outcomes (ILO)** Knowledge and understanding: 1. Knowledge of the main mathematical concepts and formalism of calculus and linear algebra. 2. Proficiency in the techniques of integral and differential calculus, and the linear algebra. Applying knowledge and understanding: 3. Ability in solving problems concerning function analysis by means of the calculus tools. 4. Ability to apply mathematical techniques and methods learned in the course. 5. Ability to adopt the mathematical formalism in problem solving. Making judgments 6. Efficiency in recognizing the right approach and convenient tools, to suitably deal with mathematical problems and questions. Communication skills 7. Proficiency to use English at an advanced level, especially in reporting on the calculations in a clear and effective way, by means of the written production and oral presentations. Learning skills 8. Ability to deal with problems in an appropriate way and to apply the suitable techniques. 9. Capability in abstracting and generalizing problems, using the suitable scientific formalism and methods.

Assessment	The written exam will consist of solving exercises. The use of calculators and books is not permitted. A list of necessary constants and formulas will be provided along with the exam text. **Formative assessment**

Form	Length/duration	ILOs assessed
In class exercises	6 hours	1,2,3,4,5,6
Home assignments	4 hours	2,3,4,6,7,8,9

<table>
<tr><td></td><td>Summative assessment
<table>
<tr><th>Form</th><th>%</th><th>Length/duration</th><th>ILOs assessed</th></tr>
<tr><td>Written exam – problems</td><td>100%</td><td>150 minutes</td><td>1,2,3,4,5,6,7,8,9</td></tr>
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<tr><td>Assessment language</td><td>English</td></tr>
<tr><td>Assessment Typology</td><td>Monocratic</td></tr>
<tr><td>Evaluation criteria and criteria for awarding marks</td><td>Every exercise has some points assigned. Points are added according to correctness of the results and exact solving procedure.
To pass the exam the final score must be greater or equal to 18. If the final score is greater than 30, a “with honors” is awarded.

After a specific request from the student, a voluntarily based oral exam can be performed. It consists of two questions, covering both theoretical questions and numerical exercises. The mark can range from 0 to +2 and it is summed up to the score of the written exam.</td></tr>
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Required readings	Lecture notes.
Supplementary readings	Any book of "Calculus" in the Library reserve collection.
Software used	