

SYLLABUS COURSE DESCRIPTION YEAR 2025/26

COURSE TITLE	Analysis
COURSE CODE	76242
SCIENTIFIC SECTOR	MATH-03/A
DEGREE	Bachelor in Computer Science
SEMESTER	2nd
YEAR	1st
CREDITS	6

TOTAL LECTURING HOURS	40
TOTAL LAB HOURS	20
ATTENDANCE	Generally, attendance is not compulsory, but non-attending students can contact the lecturer at the start of the course to agree on the modalities of the independent study.
PREREQUISITES	There are no prerequisites for this course.
COURSE PAGE	The course page will be made available on the Microsoft Teams class for this course or on https://ole.unibz.it , as communicated by the lecturer. Additional materials can also be found in the university's Reserve Collection at https://www.unibz.it/en/services/library/new-rc/ .

SPECIFIC EDUCATIONAL OBJECTIVES	<p>This course belongs to the type "Attività formative di base" and the subject area is "Matematica-Fisica".</p> <p>The aim of this course is to introduce fundamental mathematical concepts that support the study of computer science. In particular, it covers sequences and series, univariate functions, derivatives, differentials and Taylor's theorem, the Riemann integral, logarithmic and exponential functions, and normed vector spaces.</p>
--	---

LECTURER	Ognjen Savković (ognjen.savkovic@unibz.it)
SCIENTIFIC SECTOR OF THE LECTURER	INFO-01/A

TEACHING LANGUAGE	English
OFFICE HOURS	Office BZ B1 5.32, Fridays 14:00–16:00, by appointment via email
TEACHING ASSISTANTS	/
OFFICE HOURS	/
LIST OF TOPICS COVERED	<ul style="list-style-type: none"> – Sequences and series – Univariate functions – Limits of functions and continuity – Derivatives, differentials and Taylor Theorem – Riemann integral – Logarithmic and exponential functions
TEACHING FORMAT	The course includes frontal lectures and exercises.

LEARNING OUTCOMES	<p>Knowledge and Understanding</p> <ul style="list-style-type: none"> – D1.1: Have a solid knowledge of mathematical analysis, algebra, numerical calculus, discrete mathematics and elementary notion of logic that are in support of computer science <p>Applying knowledge and understanding</p> <ul style="list-style-type: none"> – D2.1: Be able to use the tools of mathematics and logic to solve problems. <p>Ability to make judgments</p> <ul style="list-style-type: none"> – D3.2: Be able to work autonomously according to the own level of knowledge and understanding. <p>Communication skills</p> <ul style="list-style-type: none"> – D4.1: Be able to use one of the three languages English, Italian and German, and be able to use technical terms and communication appropriately. <p>Learning skills</p> <ul style="list-style-type: none"> – D5.1: Have developed learning capabilities to pursue further studies with a high degree of autonomy.
--------------------------	---

ASSESSMENT	The written exam will include verification questions, transfer-of-knowledge questions, and exercises. The purpose of the assessment is to evaluate the extent to which students have achieved the learning outcomes related to knowledge and understanding, the application of knowledge, and the ability to make informed judgments. These criteria apply equally to both attending and non-attending students.
-------------------	--

ASSESSMENT LANGUAGE	English
EVALUATION CRITERIA AND CRITERIA FOR AWARDING MARKS	<p>The final written exam accounts for 100% of the final grade and covers the entire course program. Exam questions will be evaluated based on correctness, clarity, the quality of argumentation, and problem-solving ability.</p> <p>Students are offered a written midterm exam (held midway through the semester), which covers material from the first half of the course (to be specified in detail during the semester). The midterm accounts for 50% of the final exam grade. Students who fail the midterm or are unable to take it for any reason can take the final written exam instead. The midterm result is valid for three exam sessions.</p>
REQUIRED READINGS	– John M. Howie. Real Analysis. Springer, corrected edition, 2012.
SUPPLEMENTARY READINGS	– Robert A. Adams. Calculus: A Complete Course. Robert A. Adams, Toronto, 8th edition, January 2013. ISBN 978-0-321-78107-9.
SOFTWARE USED	If the use of specific software is required, it will be communicated during class by the lecturer.