Syllabus

Descrizione corso

Titolo insegnamento	Analysis
Codice insegnamento	76242
Titolo aggiuntivo	
Settore Scientifico-Disciplinare	MATH-03/A
Lingua	Inglese
Corso di Studio	Corso di laurea in Informatica
Altri Corsi di Studio (mutuati)	
Docenti	dr. Ognjen Savkovic, Ognjen.Savkovic@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/32015
Assistente	
Semestre	Secondo semestre
Anno/i di corso	1
CFU	6
Ore didattica frontale	40
Ore di laboratorio	20
Ore di studio individuale	90
Ore di ricevimento previste	
Sintesi contenuti	This course belongs to the type "Attività formative di base" and the subject area is "Matematica-Fisica". 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.
Argomenti	• Sequences and series

dell'insegnamento	• Univariate functions • Derivatives, differentials and Taylor Theorem • Riemann integral • Logarithmic and exponential functions • Limits of functions and continuity
Parole chiave	calculus, limits, series, derivates, integrals, logarithm and exponential function
Prerequisiti	There are no prerequisites for this course.
Insegnamenti propedeutici	
Modalità di insegnamento	The course includes frontal lectures and exercises.
Obbligo di frequenza	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.
Obiettivi formativi specifici e risultati di apprendimento attesi	Knowledge and Understanding - 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 Applying knowledge and understanding - D2.1: Be able to use the tools of mathematics and logic to solve problems. Ability to make judgments - D3.2: Be able to work autonomously according to the own level of knowledge and understanding. Communication skills - 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. Learning skills - D5.1: Have developed learning capabilities to pursue further studies with a high degree of autonomy.
Obiettivi formativi specifici e risultati di apprendimento attesi (ulteriori info.)	
Modalità di esame	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.
Criteri di valutazione	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. 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.
Bibliografia obbligatoria	John M. Howie. Real Analysis. Springer, corrected edition, 2012.
Bibliografia facoltativa	Robert A. Adams. Calculus: A Complete Course. Robert A. Adams, Toronto, 8th edition, January 2013. ISBN 978-0-321-78107-9.
Altre informazioni	If the use of specific software is required, it will be communicated during class by the lecturer.
Obiettivi di Sviluppo Sostenibile (SDGs)	Istruzione di qualità