1. Record Nr. UNINA9910763594403321

Autore	Papachristou Costas J.
Titolo	Elements of Mathematical Analysis : An Informal Introduction for Physics and Engineering Students / / by Costas J. Papachristou
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024
ISBN	3-031-45854-0
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (127 pages)
Collana	SpringerBriefs in Physics, , 2191-5431
Disciplina	780
Soggetti	Mathematical physics Difference equations Functional equations Engineering mathematics Mathematical Physics Difference and Functional Equations Engineering Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Functions -- 2. Derivative and Differential -- 3. Some Applications of Derivatives -- 4. Indefinite Integral -- 5. Definite Integral -- 6. Series -- 7. An Elementary Introduction to Differential Equations -- 8. Introduction to Differentiation in Higher Dimensions -- 9. Complex Numbers -- 10. Introduction to Complex Analysis -- Appendix -- Answers to Selected Exercises -- Selected Bibliography -- Index.
Sommario/riassunto	This book provides a comprehensive yet informal introduction to differentiating and integrating real functions with one variable. It also covers basic first-order differential equations and introduces higher-dimensional differentiation and integration. The focus is on significant theoretical proofs, accompanied by illustrative examples for clarity. A comprehensive bibliography aids deeper understanding. The concept of a function's differential is a central theme, relating to the "differential" within integrals. The discussion of indefinite integrals (collections of antiderivatives) precedes definite integrals, naturally connecting the two. The Appendix offers essential math formulas, exercise properties, and an in-depth exploration of continuity and differentiability. Select

exercise solutions are provided. This book suits short introductory math courses for novice physics/engineering students. It equips them with vital differentialand integral calculus tools for real-world applications. It is also useful for first-year undergraduates, reinforcing advanced calculus foundations for better Physics comprehension.