

1. Record Nr.	UNINA9910765493503321
Autore	Mercer Peter R.
Titolo	A Compact Capstone Course in Classical Calculus / / by Peter R. Mercer
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Birkhäuser, , 2023
ISBN	3-031-43914-7
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (XI, 157 p. 43 illus.)
Collana	Compact Textbooks in Mathematics, , 2296-455X
Disciplina	515
Soggetti	Mathematics Functions of real variables General Mathematics Real Functions
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1. Prelude: Vi' ete's Product -- Chapter. 2. Calculus Warm-up -- Chapter. 3. The Probability Integral & Gamma Function -- Chapter. 4. Wallis's Product -- Chapter. 5. Interlude: How Big is a Ball ? -- Chapter. 6. Convexity – Tangents -- Chapter. 7. Some Important Series -- Chapter. 8. Geometric Probability -- Chapter. 9. Convexity – Chords -- Chapter. 10. Interlude: Minkowski Distance -- Chapter. 11. The Basel Problem -- Chapter. 12. Interlude: Beyond Basel -- Chapter. 13. Stirling's Formula -- Chapter. 14. Euler's Sine Product -- Chapter. 15. Postlude: Stirling's Formula Again -- Index.
Sommario/riassunto	This textbook offers undergraduates a self-contained introduction to advanced topics not covered in a standard calculus sequence. The author's enthusiastic and engaging style makes this material, which typically requires a substantial amount of study, accessible to students with minimal prerequisites. Readers will gain a broad knowledge of the area, with approaches based on those found in recent literature, as well as historical remarks that deepen the exposition. Specific topics covered include the binomial theorem, the harmonic series, Euler's constant, geometric probability, and much more. Over the fifteen chapters, readers will discover the elegance of calculus and the pivotal role it plays within mathematics. A Compact Capstone Course in Classical Calculus is ideal for exploring interesting topics in

mathematics beyond the standard calculus sequence, particularly for undergraduates who may not be taking more advanced math courses. It would also serve as a useful supplement for a calculus course and a valuable resource for self-study. Readers are expected to have completed two one-semester college calculus courses.