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| Soggetti                | Riemann surfaces<br>Functions  |
| Lingua di pubblicazione | Inglese  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Nota di bibliografia    | Includes bibliographical references (pages 282-283) and index.   |
| Nota di contenuto       | Cover -- Contents -- PART I: PRELIMINARIES -- 1 Holomorphic functions -- 1.1 Simple examples: algebraic functions -- 1.2 Analytic continuation: differential equations -- Exercises -- 2 Surface topology -- 2.1 Classification of surfaces -- 2.2 Discussion: the mapping class group -- Exercises -- PART II: BASIC THEORY -- 3 Basic definitions -- 3.1 Riemann surfaces and holomorphic maps -- 3.2 Examples -- Exercises -- 4 Maps between Riemann surfaces -- 4.1 General properties -- 4.2 Monodromy and the Riemann Existence Theorem -- Exercises -- 5 Calculus on surfaces -- 5.1 Smooth surfaces -- 5.2 de Rham cohomology -- 5.3 Calculus on Riemann surfaces -- Exercises -- 6 Elliptic functions and integrals -- 6.1 Elliptic integrals -- 6.2 The Weierstrass [Omitted] function -- 6.3 Further topics -- Exercises -- 7 Applications of the Euler characteristic -- 7.1 The Euler characteristic and meromorphic forms -- 7.2 Applications -- Exercises -- PART III: DEEPER THEORY -- 8 Meromorphic functions and the Main Theorem for compact Riemann surfaces -- 8.1 Consequences of the Main Theorem -- 8.2 The Riemann-Roch formula -- Exercises -- 9 Proof of the Main Theorem -- 9.1 Discussion and motivation -- 9.2 The Riesz Representation Theorem -- 9.3 The heart of the proof -- 9.4 Weyl's Lemma -- Exercises -- 10 The Uniformisation Theorem -- 10.1 Statement -- 10.2 Proof of the analogue of the Main Theorem -- Exercises -- PART IV: FURTHER DEVELOPMENTS -- 11 Contrasts in Riemann surface theory -- 11.1 Algebraic aspects -- 11.2 Hyperbolic surfaces -- Exercises -- 12 Divisors, line bundles and Jacobians -- |

12.1 Cohomology and line bundles -- 12.2 Jacobians of Riemann surfaces -- Exercises -- 13 Moduli and deformations -- 13.1 Almost-complex structures, Beltrami differentials and the integrability theorem -- 13.2 Deformations and cohomology -- 13.3 Appendix -- Exercises. 14 Mappings and moduli -- 14.1 Diffeomorphisms of the plane -- 14.2 Braids, Dehn twists and quadratic singularities -- 14.3 Hyperbolic geometry -- 14.4 Compactification of the moduli space -- Exercises -- 15 Ordinary differential equations -- 15.1 Conformal mapping -- 15.2 Periods of holomorphic forms and ordinary differential equations -- Exercises -- References -- Index -- A -- B -- C -- D -- E -- F -- G -- H -- I -- J -- K -- L -- M -- N -- O -- P -- Q -- R -- S -- T -- U -- V -- W.

### Sommario/riassunto

An authoritative but accessible text on one dimensional complex manifolds or Riemann surfaces. Dealing with the main results on Riemann surfaces from a variety of points of view; it pulls together material from global analysis, topology, and algebraic geometry, and covers the essential mathematical methods and tools.