1. Record Nr. UNINA9910686774803321 Autore Papikian Mihran Titolo Drinfeld Modules / / by Mihran Papikian Cham:,: Springer International Publishing:,: Imprint: Springer,, Pubbl/distr/stampa 2023 9783031197079 **ISBN** 9783031197062 Edizione [1st ed. 2023.] Descrizione fisica 1 online resource (541 pages) Collana Graduate Texts in Mathematics, , 2197-5612;; 296 Disciplina 512.42 Soggetti Number theory Algebra Geometry, Algebraic Number Theory Algebraic Geometry Lingua di pubblicazione Inglese **Formato** Materiale a stampa Monografia Livello bibliografico Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Preface -- Acknowledgements -- Notation and Conventions -- Chapter 1. Algebraic Preliminaries -- Chapter 2. Non-Archimedean Fields --Chapter 3. Basic Properties of Drinfeld Modules -- Chapter 4. Drinfeld Modules over Finite Fields -- Chapter 5. Analytic Theory of Drinfeld Modules -- Chapter 6. Drinfeld Modules over Local Fields -- Chapter 7. Drinfeld Modules over Global Fields -- Appendix A. Drinfeld modules for general function rings -- Appendix B. Notes on exercises --Bibliography -- Index. This textbook offers an introduction to the theory of Drinfeld modules, Sommario/riassunto mathematical objects that are fundamental to modern number theory. After the first two chapters conveniently recalling prerequisites from abstract algebra and non-Archimedean analysis. Chapter 3 introduces Drinfeld modules and the key notions of isogenies and torsion points. Over the next four chapters, Drinfeld modules are studied in settings of various fields of arithmetic importance, culminating in the case of

global fields. Throughout, numerous number-theoretic applications are discussed, and the analogies between classical and function field arithmetic are emphasized. Drinfeld Modules guides readers from the

basics to research topics in function field arithmetic, assuming only familiarity with graduate-level abstract algebra as prerequisite. With exercises of varying difficulty included in each section, the book is designed to be used as the primary textbook for a graduate course on the topic, and may also provide a supplementary reference for courses in algebraic number theory, elliptic curves, and related fields. Furthermore, researchers in algebra and number theory will appreciate it as a self-contained reference on the topic.