

Contents

Preface	v
Notations and Conventions	ix
CHAPTER 1. Functions of One Complex Variable	
1. Analytic Functions and Power Series	1
2. Meromorphic Functions	5
3. Theorems of Weierstrass and Mittag-Leffler	9
4. Riemann Surfaces	16
5. Vector Bundles	23
Appendix to Chapter 1	38
CHAPTER 2. Functions of Several Complex Variables	
1. Elementary Theory of Analytic Functions of Several Complex Variables	43
2. Removable Singularities	51
3. Extension of Analytic Functions	54
4. Domains of Holomorphy	58
5. Pseudoconvexity	70
6. The Bergman Kernel Function	89
7. The Cousin Problems	93
CHAPTER 3. Local Rings of Analytic Functions	
1. Elementary Properties of Power Series Rings	98
2. Weierstrass Division and Preparation Theorems	101
3. Factorization and Finiteness Properties of \mathcal{O}_0	106
4. Meromorphic Functions	109
5. Local Properties of Analytic Sets	115
6. Modules over \mathcal{O}_0	126
CHAPTER 4. Complex Manifolds	
1. Generalities on Complex Manifolds and Analytic Sets	134
2. Complex Submanifolds of \mathbb{C}^n	137
3. Projective Algebraic Manifolds	145
4. Complex Tori	151
5. Properly Discontinuous Actions	162
6. Analytic Hypersurfaces	167
7. Blowing Up	176
Bibliography	187
Index	195