

CONTENTS

Chapter I—Holomorphic Functions	1
A The Elementary Properties of Holomorphic Functions	1
B Holomorphic Mappings and Complex Manifolds	13
C Removable Singularities	19
D The Calculus of Differential Forms	22
E The Cousin Theorem.	31
F Polynomial Approximations.	36
G Envelopes of Holomorphy	43
H Some Applications to Uniform Algebras	55
Notes	63
Chapter II—Local Rings of Holomorphic Functions	65
A The Elementary Properties of the Local Rings	65
B The Weierstrass Theorems	67
C Modules Over the Local Rings	73
D The Extended Weierstrass Division Theorem	79
E Germs of Varieties.	85
Notes	92
Chapter III—Varieties	93
A The <i>Nullstellensatz</i> for Prime Ideals, and Local Parametrization	93
B Analytic Covers	101
C Dimension	110
Notes	117
Chapter IV—Analytic Sheaves	118
A The Elementary Properties of Sheaves	118
B Sheaves of Modules	124
C Analytic Sheaves on Subdomains of \mathcal{C}^n	133
D Analytic Sheaves on Subvarieties of \mathcal{C}^n	138
Notes	146

Chapter V—Analytic Spaces	147
A Definitions and Examples	147
B Holomorphic Functions on an Analytic Space	155
C The Proper Mapping Theorem	160
D Nowhere Degenerate Maps	166
Notes	171
Chapter VI—Cohomology Theory	172
A Soft Sheaves and Fine Sheaves	172
B The Axioms of Sheaf Cohomology	175
C The Theorem of Dolbeault on Cohomology	183
D Leray's Theorem on Cohomology	186
E Cartan's Lemma	192
F Amalgamation of Syzygies	201
Notes	207
Chapter VII—Stein Spaces, Geometric Theory	208
A Approximation Theorems	208
B Special Analytic Polyhedra	215
C The Imbedding Theorem	219
D Uses of Special Analytic Polyhedra	226
Notes	233
Chapter VIII—Stein Spaces, Sheaf Theory	234
A Frechet Sheaves	234
B Meromorphic Functions	246
C Locally Free Sheaves	252
Notes	259
Chapter IX—Pseudoconvexity	260
A The Complex Hessian	260
B Grauert's Solution of Levi's Problem	264
C Plurisubharmonic Functions	271
D Oka's Pseudoconvexity Theorem	279
E Kodaira's Theorem on Projective Varieties	284
Notes	287
Appendix A—Partitions of Unity	288
Appendix B—The Theorem of Schwartz on Frechet Spaces	290
References and Bibliography	296
Index	313