

CONTENTS

	Introduction	ix
	Acknowledgement	xii
Chapter 1	Introduction to Singularity Theory with Historical Remarks . . .	1
	1. Introduction with naive discussion	1
	2. Elementary definitions	3
	3. Genericity	12
	4. Stability	14
	5. Singularities	20
Chapter 2	On Singularities of Mappings from the Plane into the Plane . . .	24
	1. Introduction	24
	2. Jet spaces	25
	3. Transversality	26
	4. Morse Lemma - the genericity aspect	31
	5. Characterization of folds and cusps	33
	6. Whitney's Theorem	43
	7. The proof of Theorem 6.1	44
	8. The proof of Theorem 6.2	48
Chapter 3	Unfoldings of Mappings	52
	1. Introduction	52
	2. Germs of mappings	55
	3. Finitely determined germs	60
	4. Universal unfolding	66
	5. Thom's Classification Theorem	85
Chapter 4	Catastrophe Theory	95
	1. Introduction	95
	2. Naive discussion with illustrative examples	96
	3. The elementary catastrophes	100
	4. Types of elementary catastrophes	104
Chapter 5	Thom-Whitney Stratification Theory	120
	1. Introduction	120
	2. Examples	122
	3. Regularity conditions of H. Whitney	124
	4. Fundamental theorems	132
	5. Ratio test	138

CONTENTS

Chapter 6	C^0 -Sufficiency of Jets	142
	1. Introduction	142
	2. Criterion of C^0 - and v -sufficiency of jets in $J^r(n,1)$. .	147
	3. Degree of C^0 -sufficiency	155
	4. Sufficiency of jets in $J^r(n,p)$	161
	Appendix I - Thom's Three Basic Principles	166
	Appendix II - The Proof of Thom's Classification Theorem	181
	Further Reading	192
	Index	197