

# CONTENTS

<b>Chapter 1</b>	<b>Definitions and examples</b>	
1.1	Introduction	3
1.2	Convex polyhedral cones	8
1.3	Affine toric varieties	15
1.4	Fans and toric varieties	20
1.5	Toric varieties from polytopes	23
<b>Chapter 2</b>	<b>Singularities and compactness</b>	
2.1	Local properties of toric varieties	28
2.2	Surfaces; quotient singularities	31
2.3	One-parameter subgroups; limit points	36
2.4	Compactness and properness	39
2.5	Nonsingular surfaces	42
2.6	Resolution of singularities	45
<b>Chapter 3</b>	<b>Orbits, topology, and line bundles</b>	
3.1	Orbits	51
3.2	Fundamental groups and Euler characteristics	56
3.3	Divisors	60
3.4	Line bundles	63
3.5	Cohomology of line bundles	73
<b>Chapter 4</b>	<b>Moment maps and the tangent bundle</b>	
4.1	The manifold with singular corners	78
4.2	Moment map	81
4.3	Differentials and the tangent bundle	85
4.4	Serre duality	87
4.5	Betti numbers	91
<b>Chapter 5</b>	<b>Intersection theory</b>	
5.1	Chow groups	96
5.2	Cohomology of nonsingular toric varieties	101
5.3	Riemann-Roch theorem	108
5.4	Mixed volumes	114
5.5	Bézout theorem	121
5.6	Stanley's theorem	124
<b>Notes</b>		131
<b>References</b>		149
<b>Index of Notation</b>		151
<b>Index</b>		155