

# Table of Contents

## Chapter 1. Vector Bundles

<b>1.1. Basic Definitions and Constructions</b> . . . . .	1
Sections 3. Direct Sums 5. Pullback Bundles 5. Inner Products 7. Subbundles 8. Tensor Products 9. Associated Bundles 11.	
<b>1.2. Classifying Vector Bundles</b> . . . . .	12
The Universal Bundle 12. Vector Bundles over Spheres 16. Orientable Vector Bundles 21. A Cell Structure on Grassmann Manifolds 22. Appendix: Paracompactness 24.	

## Chapter 2. Complex K-Theory

<b>2.1. The Functor <math>K(X)</math></b> . . . . .	28
Ring Structure 31. Cohomological Properties 32.	
<b>2.2. Bott Periodicity</b> . . . . .	39
Clutching Functions 38. Linear Clutching Functions 43. Conclusion of the Proof 45.	
<b>2.3. Adams' Hopf Invariant One Theorem</b> . . . . .	48
Adams Operations 51. The Splitting Principle 55.	
<b>2.4. Further Calculations</b> . . . . .	61
The Thom Isomorphism 61.	

## Chapter 3. Characteristic Classes

<b>3.1. Stiefel-Whitney and Chern Classes</b> . . . . .	64
Axioms and Construction 65. Cohomology of Grassmannians 70. Applications of $w_1$ and $c_1$ 73.	
<b>3.2. The Chern Character</b> . . . . .	74
The J-Homomorphism 77.	
<b>3.3. Euler and Pontryagin Classes</b> . . . . .	84
The Euler Class 88. Pontryagin Classes 91.	