

CONTENTS

	Page
I. STATEMENT OF THE THEOREM	
1. Characteristic Classes	1
2. Motivation for the Index Theorem	8
3. Statement of the Index Theorem	12
II. APPLICATIONS OF THE INDEX THEOREM	
4. The de Rham Operator	20
5. The Dolbeault Operator	24
6. The Hodge Operator	31
7. The Dirac Operator	45
III. OUTLINE OF THE PROOF	
8. The Ring $K(X)$	59
9. The Topological Index B	72
10. Pseudodifferential Operators	79
11. Construction of the Index Homomorphism	88
12. Proof of the Index Theorem	94
IV. THE ATIYAH-SINGER FIXED POINT THEOREM	
13. The Topological G -Index B_G	110
14. The G -Index Theorem.	116
15. The Atiyah-Singer Fixed Point Theorem	120
V. APPLICATIONS OF THE FIXED POINT THEOREM	
16. The Lefschetz Fixed Point Theorem	124
17. The Holomorphic Fixed Point Theorem	129
18. The G -Signature Theorem.	140
19. The G -Spin Theorem	158
APPENDIX	
A1. Classifying Spaces	186
A2. The Splitting Principle for Complex Vector Bundles	191
A3. The Splitting Principle for Real Vector Bundles	194
A4. The Splitting Principle and Spin Bundles	199
A5. Universal Symbols	205
REFERENCES	211
INDEX	220