

NORMAL SYSTEMS OF MODAL LOGIC

by

CHOU SOI NGAN

Master of Science in Mathematics

2000



**Faculty of Science and Technology
University of Macau**

Table of contents

Chapter1	Introduction	1
Chapter2	Logical preliminaries	4
	Section 2.1 Syntactic concepts for the language	4
	Section 2.2 Semantic concepts: Models, truth and validity	8
	Section 2.3 Valid sentences	12
	Section 2.4 Relationship between modal logic and propositional logic	15
	Section 2.5 Cases of invalidity	17
	Section 2.6 Systems of modal logic	18
	Section 2.7 Maximality	23
	Section 2.8 The system S5	25
Chapter 3	Normal systems of Modal logic	34
	Section 3.1 First properties and characterizations of normal systems	34
	Section 3.2 Other different characterizations of normal systems	42
	Section 3.3 Modally generalization, replacement and duality	47
	Section 3.4 the schemas D, T, B, 4 and 5	52
	Section 3.5 Application: Some theorems on the systems of the previous section	60
Bibliography		66