Dedication

To Our

Fathers,

Mothers,

 $\mathsf{And} \\$

Brothers.

Acknowledgments

First of all, we would like to thank to Allah. The most beneficent, the most mercitul, for all his guidance and given while we were preparing, doing and finishing this thesis.

We would like to express our deep gratitude to our supervisor prof.Dr.Shawgy Hussein for the guidance, suggestion and invaluable encouragement in our undergraduate education.

Special thanks to our staff academic in Math department.

As well as our Colleagues,

last but never least, we would like to thank my our mothers and fathers for their endless, love encouragement and support throughout our life.

Abstract

We give a full characterizations of the effect of shift operators, their partial isometries and concrete generalizations we construct the interpolation theorem by which we investigate the Pick-Nevanlinna and Lowner types.

We also show the factorization of Toeplitz and outer operators. The methods of concrete spectral analysis are now shown.

The Contentes

Subject		Page
Dedication		I
Acknowledgements		II
Abstracts		III
The contents		IV
	Chapter 1	
	Shift Operators	
Sec(1.1)	Partial isometeries and Wold	1
	Decomposition with inner	
	operators Hilbert spaces	
Sec(1.2)	Beurling-Lax and lifting Theorems	12
,	with concrete Realization of a	
	shift operator	
	Chapter 2	
	Pick-Nevanlinna and Loewner	
	types with Interpolation	
	-	
Sec(2.1)	Generalization of the pick-	25
	Nevanlinna and Caretheodory-	
	Fejer Theorems Restrictions	
	Boundary Functions Pick class	
Sec(2.2)	Generalized Loewner Thermos	36
	and Hilbert Transform with	
	Imaginary functions	
	Chapter 3	
	Factorization of Toeplitz	
	Operators	
Sec(3.1)	Factorization of Non negative	43
	Invertible Toeplitz operators	
Sec(3.2)	Scalar Analytic operators and	5 2
	Extremely Properties of outer	
	operators	
	Chapter 4	61
	Concrete Spectral Theory	
Reference		71
Helef Chice		•1