# POSETS OF IDEALS IN TRANSFORMATION
# SEMIGROUPS WITH INVARIANT SETS

ATTAPOL PRALEAH

MASTER OF SCIENCE
IN MATHEMATICS

GRADUATE SCHOOL
CHIANG MAI UNIVERSITY
MARCH 2015

# POSETS OF IDEALS IN TRANSFORMATION
# SEMIGROUPS WITH INVARIANT SETS

**ATTAPOL PRALEAH**

A THESIS SUBMITTED TO CHIANG MAI UNIVERSITY IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE
IN MATHEMATICS

GRADUATE SCHOOL, CHIANG MAI UNIVERSITY
MARCH 2015

i

# POSETS OF IDEALS IN TRANSFORMATION
# SEMIGROUPS WITH INVARIANT SETS

ATTAPOL PRALEAH

THIS THESIS HAS BEEN APPROVED TO BE A PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE
IN MATHEMATICS

**Examination Committee :**

Advisor :

..........*Boorapa Singha*.......... Chairman

..........*Jintana Sanwong*..........

(Dr. Boorapa Singha)

(Prof. Jintana Sanwong)

..........*Jintana Sanwong*.......... Member

(Prof. Jintana Sanwong)

..........*Preeyanuch Honyam*.......... Member

(Dr. Preeyanuch Honyam)

20 March 2015

# ACKNOWLEDGEMENT

Pursuing master degree is definitely one of the hardest and most stressful things in my life. Many people has been a part of my graduate education. First and foremost, I would like to express my sincerest gratitude to my supervisor, Prof. Jintana Sanwong, I have been lucky to have a supervisor who cared so much about every progression of my work.

This work contains a number of improvement based on comments and suggestions provided by Prof. Jintana Sanwong, Dr. Boorapa Singha and Dr. Preeyanuch Honyam. It is my pleasure to express my sincere thanks to them all for their charitable assistance.

I would like to express my special thanks to my best friends, Mr. Suriyon Yimnet, Mr. Nuttawoot Nupo and Miss Yanisa Chaiya, for their critical reading of the manuscript, opinions and recommendations. Moreover, thanks are extended to all my friends at Chiang Mai University for their help, friendship and moral support. Thanks are also to my senior, Mr. Wanchai Tapanyo, for his help regarding a template of this thesis and suggestions about LaTeX–program. Furthermore, I greatly appreciate my beloved family for their love and encouragement.

Finally, I gratefully indebted to all the lecturers who taught me during the under-graduate program at Thammasat University and the graduate program at Chiang Mai University.

Attapol Praleah