## Acknowledgements

I am deeply grateful to Professor Don McNeil, advisor, for his kindness, support, valuable guidance, and encouragement during this research, together with his constructive criticisms for improvement of my thesis.

Also, I would like to express my sincere appreciation and deepest thank to Dr. Yupadee Chaisuksant, co-advisor, for her encouragement and constructive guidance. My special thanks to Asst.Prof.Dr. Naiyana Srichai, MissWanlapa pornpiriyamongkol, Mr. Puntri Jirattitiviwat, Mr.Mahbub-E-Elahi K Chowdbury and my lovable classmates; Mr.Chaiya Verakun, Mr.Montri Sirichai, Mr.Ratchakarn Witchurangsri, Miss Siriporn Keawdaisri, Miss Thitiphit Kalasuwan, and Miss Sunaree Sea-Jeang for their assisting in collecting water sample and depth measurement in Pattani Bay. Also a special thanks to Mrs. Metta Kuning, Miss Chamnein Choonpradup, Miss Phattrawan Tongkumchum, Miss Nittaya Chirtkiatsakul, Mr.Sukree Hajisamea, the Ph.D. students, for their valuable comments on my thesis writing.

I am deeply indebtedness to Saengtham Witaya School Administrators; Mr. Makrata Saleamea, Mr. Ahmadzainee Da-oh, and Mr. Muhammadhilmi Da-oh for their kindness and support during my study. Also thanks to my closet friends there for their helpfulness and solacing.

I would also like to express my thankfulness to Asst.Prof. Paktra Kooburat, Assoc.Prof. Yindee Saklertwachara, Mrs. Kanda Yannasarn, Assoc.Prof.Dr. Pairote Klinpitaksa and Asst.Prof.Dr. Jiraporn Chompikul for serving in the thesis committee and making helpful comments. Also to all the teachers in the Department Mathematics and Computer Science, Science and Technology Faculty, PSU for helpful advice and my thanks go to the Graduate School of Prince of Songkla University for supporting the thesis scholarship.

Finally, my greatly sincere appreciation is to my parent, my kindness sisters and brothers, my dearest friends and also Mr.Abdulhalim Chehok, for their encouragement and support.

Miss Zainab Ma