

**WATER LEVEL PROFILE CALCULATION
USING HEC-RAS**

NADIA BINTI TULOS

**B.Eng (Hons)(Civil)
UNIVERSITI TEKNOLOGI MARA
2004**

WATER LEVEL PROFILE CALCULATION USING HEC-RAS

By

NADIA BINTI TULOS

Report is submitted as
the requirement for the degree of
Bachelor Engineering (Hons)(Civil)

UNIVERSITI TEKNOLOGI MARA
2004

DECLARATION BY THE CANDIDATE

I, Nadia Binti Tulos, 2001498623 confirm that the work is my own and that appropriate credit has been given where reference has been made to the work of others.

ACKNOWLEDGEMENT

In the Name of Allah, The Most Beneficent and The Most Merciful, I would like to express my sincere gratitude to individual that had been helping me in preparing my research proposal.

I would like to express my appreciation to my supervisor, Mrs. Caroline Peter Diman for her guidance and patience until I manage to complete this study. All her lesson and taught will not be forgotten.

I also would like to thanks staff of Drainage and Irrigation Department (DID), Ampang for the valuable data they had given me for this study.

Special thanks to the most important person in my life, my parents and family, thank you for your material and moral support. Last but not least, for all my friends for giving their supports and make all this possible.

Thank you very much. May Allah bless you all.

ABSTRACT

Computer programmers have been used by engineer since 1960's to perform calculation to determine channel flow characteristics. Engineers design drainage channel, storm sewer or culvert for example base on the calculation of water surface profile. Even though the calculation can be done manually but it is not suitable because it takes longer duration. Because of this many software have been develop since that. Nowadays there are much software in market such as HEC-2, HEC-6, HEC-5 and HEC-FDA. Each of the software has its own used for example HEC-5 that is used for simulation of flood control and conservations system. HEC-2 is used to calculate water surface profile for any cross-section. HEC-RAS is one of the numerical simulations that are used to analyze water surface profile. HEC-RAS River Analysis System is a computer program that is developed by U.S Army Corps of Engineers Hydrologic Engineering Center. HEC-RAS numerical simulation for Klang River shows that the water level calculated from the software provide nearly the same water level from the data collection from Department of Irrigation (DID).The limitation for this study is that steady flow analysis is done for simulation and Klang River is fixed bed. The parameter for calibration is Manning's Roughness, n and the value is 0.01.This Manning's roughness, n for Klang River represents trowel finish, concrete line up channel. HEC-RAS can be used to predict the water level profile after calibration and verification of the parameters.