

**LAPORAN PROJEK TAHUN AKHIR  
KURSUS DIPLOMA LANJUTAN KEJURUTERAAN AWAM  
KAJIAN KEJURUTERAAN  
INSTITUTE TEKNOLOGI MARA  
SHAH ALAM**

**ITM WASTEWATER TREATMENT UNIT:  
OPERATIONAL DESIGN AND PERFORMANCE EVALUATION**

**BY**

**MOHD MOKHTAR BIN ABU BAKAR**

**DEPARTMENT OF CIVIL ENGINEERING  
MARA INSTITUTE OF TECHNOLOGY  
SHAH ALAM SELANGOR D.E.**

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## S Y N O P S I S

In the study, several units of wastewater treatment in ITM Shah Alam campus were evaluated in term of their efficiencies. Several kinetic parameters were determined and some were used in the 'BIOTREAT' program for comparison.

## CHAPTER 1

### **1.0 INTRODUCTION**

The primary objective of wastewater treatment is to remove or modify those contaminant harmful to human health or the water, land and environment.

Usually the outlets for disposal of treated (or untreated) wastewater are streams, rivers, lakes and oceans. To protect these water resources, the discharge of pollutants into them must be controlled. This is done by setting effluent requirements for BOD, SS and fecal coliform. Therefore the most challenging aspects of treatment plant design is to analyse and select the treatment process to meet the permitted requirements.

In the study several units of wastewater treatment in ITM Shah Alam campus have been chosen. There are; Oxidation Pond of Kolej Delima, Activated Sludge (conventional) of Kolej Anggrik and Activated Sludge (extended aeration) of Kolej Seroja. The above treatment plant will be evaluated in term of their BOD removal efficiency. Several kinetic parameters are determined and comparison will be made between actual measured BOD removal efficiencies to that of the 'BIOTREAT' values.

'BIOTREAT' is a biological treatment model used as a design aid for a full range of biological processes employing suspended growth in a completely-mixed reactor.