

**COMPUTER APPROACH USING MATHCAD FOR
BETTER UNDERSTANDING TO THE
STRUCTURAL ANALYSIS II (KJC 424)**

WAN MUHAMAD FAHMI WAN ZAKI

**B.ENG (HONS) (CIVIL)
MARA UNIVERSITY OF TECHNOLOGY
MARCH 2006**

**COMPUTER APPROACH USING MATHCAD FOR BETTER
UNDERSTANDING TO THE STRUCTURAL
ANALYSIS II (KJC 424)**

By

WAN MUHAMAD FAHMI WAN ZAKI

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

**UNIVERSITI TEKNOLOGI MARA
MARCH 2006**

DECLARATION

I (Wan Muhamad Fahmi Bin Wan Zaki, 2003339606) confirm that the work is my own and the appropriate credit has been given where reference has been made to the work of others.

(_____NOVEMBER 15, 2006)

ACKNOWLEDGMENTS

First and foremost, thanks to Allah, most gracious and most merciful, I would like to express my deepest sense of gratitude that I have managed to complete this project proposal.

Secondly, I would like to express my appreciated and gratitude to my supervisor, En Mohd Zaini Bin Endut for his full guidance in completing this proposal. Also his encouragement, advice and ideas in the preparation of this proposal.

Thirdly, I am also grateful to my family members, Cik Rafizah from Faculty of Science and Mathematic and Mohd Nasiruddin Maamin for their understanding and support during preparation of the proposal.

Last but not least, I wish to express my deepest appreciation to those who have contributed some way to carry out this project.

ABSTRACT

This proposal describes a study that was conducted to develop a programme for the Structural Analysis II (KJC 424) using MathCAD and to encourage the KJC 424 students for better understanding in structural analysis especially indeterminate structural. This study is beneficiary to all individuals who are interested on structural analysis especially for students. Hence, it is encourage students to understand the concept of analysis. Type of structure was analyse is beam. This study focused on analyzing an indeterminate structure and Flexibility Method. The analysis of the beam (indeterminate system) in this programme consist two types of Degree of indeterminacy; it is statically indeterminate to degree 1 and 2. Methodology that involved in this study is manual calculation, method and Procedure, Modeling using MathCAD and run analysis. Manual Calculation is covered a beam the loading such as Uniform Distributed Load and point load. Method used in solving indeterminate structure is Flexibility Method (Unit Load Method). The second phase is a Method and Procedure. After manual calculation stage done, the modeling stage has began using MathCAD. The conclusion and recommendation based on the study, all the results from the programme and other software is almost similar, all the diagrams shown by the programme is same with Stab2D software, It is concluded that we focus in our main objective which is fully related to the programme itself and to develop a better programme which is can solve a various types of structure using MathCAD's.