# UNIVERSITI TEKNOLOGI MARA

# TECHNICAL REPORT

## THE RELATIONSHIP BETWEEN HEAT TRANSFERS IN BOILING EGGS WITH THE TYPES OF WATER USING PETER BARHAM'S FORMULA

**P43S18**

**NOOR RASYIQAH BINTI ABD. RAZAK (2016307569)**

**NORSYAFIQAH BINTI MAZLAN (2016577261)**

**ROS SURIYATE BINTI SULAIMAN (2016765259)**

**Bachelor of Science (Hons.) (Mathematics)**

**Faculty of Computer and Mathematical Sciences**

**DECEMBER 2018**

## ACKNOWLEDGEMENTS

IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

Firstly, we would like to thank Allah S.W.T and HIS messenger for giving us the strength to complete this Final Year Project successfully. This Final Year Project report was prepared for Faculty of Science Mathematics, Universiti Teknologi Mara (UiTM) Campus Seremban Tiga, basically for student in final year to complete the undergraduate program that leads to the degree of Bachelor of Science (Hons) Mathematics.

We would like to express our gratitude to all those who gave us the possibility to complete this project report. A special thanks to our Final Year Project supervisor, Mrs. Rosha Binti Mohamed who help in guiding and motivating us by giving suggestion especially in completing this report smoothly and successfully.

Earnest thanks to Dr Mat Salim Selamat and Dr. Maznah Banu Binti Mohamed Habiboo Raman for their advice. Also we would like to thanks to all our friends who had helped and shared their ideas with us. Last but not least, special thanks to our family because always encouraging and praying for us to complete this project report.

# TABLE OF CONTENTS

## ABSTRACT

Boiling egg can be done in a simple way but it could be a problem when people did not know the perfect time to cook the eggs. Using suitable mathematical model, the exact time for the egg to be perfectly cooked can be determined. Various grade of eggs and different type of water will affect the time taken to get well cooked egg. The aim for this research is to compare the Peter Barham's formula with the experiments using different size of egg according to their grade (A, B, C, D, E) and two type of water. In this research, the concept of heats transfers in cooking have been studied and Peter Barham's formula was used to calculated the specific time for the egg to be perfectly cooked. An experiment of boiling eggs also had been carried out to verify the formula using two different type of water which are pure water and salt water. Different temperature which increasing temperature from 65°C to 85°C also has been used to know the time for the egg to be cooked. Temperature for each boiling also be recorded to know if the time cooked meet the numerical result. The results of the experiment are consistent with the numerical result. Which the higher the temperature to cook the egg, the shorter the time taken for the egg to be cooked. This study only focus on whole egg to be perfectly cooked using Peter Barham's formula which this can be observe more only on the yolk using others mathematical method.