

**UNIVERSITI TEKNOLOGI MARA**

**ANALYSIS OF COVID-19 DEATH CASES USING SIR MODEL  
AND ARIMA MODEL – PRE AND POST PICK PROGRAM**

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**Report submitted in fulfillment of the requirements for Bachelor of  
Science (Hons.) Management Mathematics Faculty of Computer and  
Mathematical Sciences.**

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## **SUPERVISOR’S APPROVAL**

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This report was prepared under the direction of supervisor, Madam Balkiah Bt Moktar. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfillment of the requirements for the degree of Bachelor of Science (Hons.) Management Mathematics.

**Approved by:**

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Madam Balkiah Bt Moktar

July 15, 2022

## **STUDENT'S DECLARATION**

I certify that this report and the research to which is refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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## **ABSTRACT**

In the year 2020, a significant risk to public health was discovered. The new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) epidemic began in December 2019 in Wuhan City, Hubei Province, China, and spread to the rest of the world. According to the World Health Organization, this disease is known as COVID-19. The number of death cases increasing day by day. The goal is to analyse the trend of COVID-19 death cases rising or falling in Malaysia. Susceptible-Infected-Recovered (SIR) model and ARIMA model is used in this study to forecast the number of death cases in Malaysia. The prediction data has divided into three classes which is prediction before vaccination program has started, prediction after first and second dose and prediction after booster dose. SIR model result is suited to predicting epidemic trend while ARIMA model is the best model to comparing actual and predicted values. The models are compared, and the further research were recommended.

**Keywords:** SIR model; ARIMA model; Malaysia

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