

ABSTRAK

Dalam skripsi ini dikaji kestabilan model susceptible exposed infected quarantined recovered pada penyebaran covid-19. Pada model ini populasi dibagi menjadi 5 subpopulasi, *susceptible* (S), *exposed* (E), *infected* (I), *quarantined* (Q) dan *recovered* (R). Model ini memiliki dua titik ekuilibrium yaitu titik ekuilibrium bebas penyakit dan titik ekuilibrium endemik penyakit. Selanjutnya dilakukan analisis kestabilan pada kedua titik ekuilibrium tersebut yang menunjukkan bahwa kedua titik ekuilibrium tersebut stabil asimtotik. Untuk melihat implementasi dari model diperlukan simulasi numerik dengan bantuan *software* Maple.

Kata Kunci : *Kestabilan Model, Covid-19, Stabil Asimtotik.*

ABSTRACT

This thesis examines the stability of the susceptible exposed infected quarantined recovered (SEIQR) model in the spread of COVID-19 is examined. In this model, the population is divided into 5 subpopulations, namely *susceptible* (S), *exposed* (E), *infected* (I), *quarantined* (Q) and *recovered* (R). The model has two equilibrium points, namely the disease-free equilibrium point and the endemic equilibrium point. Furthermore, stability analysis is conducted on both equilibrium points, which shows that both equilibrium points are asymptotically stable. To observe the implementation of the model, numerical simulations are required with the assistance of Maple software.