

COSC: 4320: System Modeling and Simulation

Spring 2020

Bonus Programming Assignment

Total points: 08

Due Date: 05/02/2020

**Instructions:**

- **Submit Documented Python Code implementation ONLY**
- **No pdf or handwritten/manual submission will be accepted**

Question:

A logistic Model is given as

$$\frac{dx}{dt} = r x \left(1 - \frac{x}{K}\right)$$

Do the following:

- Conduct a linear stability analysis to determine whether this model is stable or not at each of its equilibrium point.