Topics for Exam 2

1. **Continuous Dynamical Systems**

   1.1 Orbits

   1.2 Invariant sets

   1.3 Fixed points

   1.4 Cycles and periodic solutions

   1.5 Limit cycles

2. **Liapunov Stability**

   2.1 Equilibrium points

   2.2 Liapunov stability

   2.3 Liapunov functions

   2.4 Stability of limit cycles

Relevant sections in the text: Sections I.7, I.8, II.1 and X.1.

Relevant sections in the online class notes: Sections 4.4, 4.5, 4.6, 4.7, 4.8 and 4.9.

Relevant assignments: Assignments 5, 6, 7, 8 and 9.

Important Concepts: Orbits, invariant sets, equilibrium points, limit sets, cycles, periodic solutions, limit cycles, Liapunov stability, Liapunov function.

Important Skills: Know how to compute limit sets, know how to apply the method of Liapunov to determine stability or instability