**SYLLABUS:**
**MA 532 – Ordinary Differential Equations – Fall, 2017**
**R H Martin, Instructor**

Text: *Differential Equations and Dynamical Systems* by L. Perko (3rd Edition)

Section 1: Basic definitions, techniques and equations (1 and ½ weeks)
  Linear and Separable equations in R
  Basic differential inequalities

Section 2: Existence, continuous dependence (2 weeks)
  Chapter 2 sections 1-5 and Notes

Section 3: Invariant sets for solutions (2 weeks)
  Notes

Section 4: Linear equations and techniques (2 and ½ weeks)
  Chapter 1 and Notes

Section 5: Stability by linearization (1 week)
  Chapter 2 section 6 and Notes

Section 6: Lyapunov techniques (2 weeks)
  Chapter 2 section 9 and Notes

Section 7: Dynamical systems and phase plane analysis (2 weeks)
  Chapter 3 sections 1-3,7-8 and Notes