SPRING 2016
SYLLABUS

Course title	**BIOMATHEMATICS SEMINAR 2**
Course number	MAP 6488
Schedule, Room	**MWF 7**, Lit 203
Instructor	Maia Martcheva maia@ufl.edu http://people.clas.ufl.edu/maia/
Main themes	**An Introduction to Mathematical Epidemiology, Part II**

Goals: To introduce students to more advanced topics of infectious disease modeling. Develop skills to form and analyze more complex mathematical models of infectious diseases.

Topics:

(1) Analysis of more complex ODE models. Lyapunov function.
(2) Multi-strain disease dynamics.
(3) Control Strategies. Optimal control.
(4) Infectious diseases in animal populations.
(5) Zoonotic diseases. Non-autonomous models.
(6) Spatial metapopulation epidemic models.
(7) Discrete-time epidemic models, part II.

Prerequisites: MAP 6487 or consent of instructor. Familiarity with differential equations and elementary linear algebra will be useful.

Requirements:

(1) Students will be expected to make presentations. In particular, each student will present a paper of choice. Alternatively, students may make a presentation on their current research projects if related to infectious disease epidemiology.
(2) There will be some homework problems assigned which will be graded.
(3) Students will be expected to attend class.
(4) We will use Mathematica and Matlab for computation. Having access to the software may help you learn more in the class.

Grading: Grades will be based on (1) Attendance; (2) Homework and presentations.