**Macroeconomics II – Econ 970**

**University of New Hampshire**

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The goal of the course is twofold: to familiarize students with computational techniques that will become essential for ECON 973, and to understand macroeconomic theories on endogenous growth. In previous courses, you became familiar with standard macroeconomic models that deliver no growth in steady state. We will start by reviewing these models and using the computer to simulate economies according to these theories. This has the purpose of getting you acquainted with Matlab, and to strengthen knowledge that will be useful both for understanding models of endogenous growth and prepare you for more elaborate models to be covered in ECON 973.

 Many homework assignments will be based on the use of Matlab. To this end, we will base our course on discrete time models, since these are easier to adapt to computational needs.

This course is self-contained. That is, all you need is the class notes. Nevertheless, there are textbooks, papers, and my own set of class notes that you can use to clear doubts or expand your learning beyond the requirements of this course.

**Evaluation**

Surprise quizzes: 5%

Homeworks: 35%

Final Exam: 60%

**Homeworks**

There will be regular homeworks, that will include both Matlab based problems and theory based problems. For the Matlab related problems, I will ask you to turn in the code via email, and I will run it in my computer to verify that everything works. If there are more than one code being performed, put them all within a folder and submit the entire folder. For the theory part, on the days in which you need to turn in the homework, I will call you by lottery to solve them on the board. A different student will solve each exercise.

**Books and Class Notes**

There are personal class notes made by me that follow the classes very closely. In addition, the following textbooks can complement these notes:

1. Recursive Methods in Economic Dynamics (“SLP”), by Nancy Stokey and Robert Lucas, Jr., with Edward C. Prescott, Harvard University Press (1989).
2. Recursive Macroeconomic Theory (“LS”), by Lars Ljunqvist and Thomas Sargent, MIT Press (2004).
3. Economic Growth (“BS”), by Robert Barro and Xavier Sala-i-Martin, MIT Press (2004).

Additionally, two unpublished books by Dirk Krueger can be useful, that I can provide on demand. These are

* Consumption and Saving: Theory and Evidence (“K1”)
* Macroeconomic Theory (“K2”)

**Tentative Program**

1. Introduction to the language in Macroeconomics (1 lecture)
	1. Allocations, feasibility, Pareto optimality, decentralized equilibria
2. A review of the Solow model (2 lectures)
	1. Theoretical implications
	2. Computing the Solow model in Matlab
3. A review of the standard growth model (3 lectures)
	1. Theoretical implications
	2. Computing the standard growth model in Matlab
	3. Extensions of the standard growth model
4. Endogenous Growth models (4 lectures)
	1. The AK model
	2. The kK model
	3. The Lucas model of human capital
	4. The Romer model of R&D

References:

* BS, Chapters 1 and 2
* K2, Chapter 3