Macroeconomics I

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Course Overview: The first course in Macroeconomics focuses on stochastic models with infinitely lived agents. We will mostly build upon the main workhorse of modern macroeconomics: the optimal (equilibrium, neoclassical) growth model.

We first learn dynamic programming techniques and then use them to study the stochastic growth model. We also learn some simple solution techniques which make these models tractable using the computer. This methodology will enable us to study the sources and implications of business cycles and economic growth. We also show how we can decentralize the efficient allocation (the solution of the social planner's problem) as a competitive equilibrium.

Then we turn our attention to another source of uncertainty: idiosyncratic shocks. We start this by studying how consumption responds to individual income shocks under different market structures and under different assumptions on the shock process. Then we enrich the environment of the neoclassical growth model by introducing ex post heterogenous agents facing stochastic and idiosyncratic (income) shocks. We will see that when these shocks are uninsurable then the allocation will be different from the representative agent model. Hence, these models will provide us with tools to study several important questions like the interaction between the income, consumption and wealth dispersions and the distributional effects of different economic policies.

Readings: I will provide lecture notes extensively. The main background material is in the following textbooks:

- N. Stokey, R. Lucas and E. Prescott: Recursive Methods in Economic Dynamics, Harvard University Press, 1989.
- L. Ljungqvist and T. J. Sargent: Recursive Macroeconomic Theory, The MIT Press, 2nd edition, 2004.
- T. F. Cooley (ed.): Frontiers of Business Cycle Research, Princeton University Press, 1995.

Grading: There will be 5 assignments throughout the term and a final exam. They will count toward the final grade as follows.

Assignments	10%
Final	90%

The assignments will consist of some modelling, analytical and numerical tasks. Some very basic knowledge of programming will be assumed. Simple Matlab codes will be provided and discussed during class and/or recitations.

Course Website: There will be a course website in Moodle where I will post all relevant material (lecture notes, assignments and their solution, etc.).