General Information

- **Class time and location:** Monday and Wednesday 11:00 am-12:15 pm in Kimmel Center 808.

- **Office Hours:** Wednesday 1:00-2:00 pm in my office, Room 712, Department of Economics, 19 W. 4th Street, on the 7th floor. You can always contact me by phone at extension X2-9771 or by e-mail <gianluca.violante@nyu.edu> to arrange an alternative time, if that does not suit you.

- **Teaching Assistant:** Sai Ma <sai.ma@nyu.edu>. Office hours: Monday 5:00-6:00 pm in Room 819 in the Department of Economics. Again, contact Sai by phone at extension X8-8900 or by e-mail to arrange an alternative time, if this does not work for you.

- **Recitation:** Friday 12:30-1:45 and 2:00-3:15 in Silver 621.

- **Attendance:** Students are expected and strongly advised to attend every lecture, since most of the material is not covered thoroughly by the textbook, and because each topic builds on the previous ones.

Grading Policy

- **Examinations:** There will be two midterms (**February 24 and April 7**) each counting for 25% of the final grade. The final exam (**May 16**) is **cumulative** and counts for the remaining 50%. There is no make-up examination for the midterms. If you have to or decide to skip one of the midterms, then the final exam will count for 75%, and if you miss both it will count for 100% of the final grade. I'll reserve the right to arrange a make-up examination for the final exam only in extreme cases (personal or medical emergencies, for which the student must provide a written excuse signed by a doctor, parent, or university official which will be properly verified).
• **Grading:** Any grade between 0 and 100 can be awarded in the examinations. In the past, a letter grade of *A* corresponded approximately to the range 80+, *B* to 80 – 60, *C* to 60 – 40, *D* to 40 – 20 and *F* to 20 – 0. The final grade for the course is obtained through a weighted average of the three grades (two midterms, and final). It is Departmental policy that any student who requests an “incomplete” for the course must obtain a written excuse from the Director of Undergraduate Studies.

• **Homework:** A problem set will be handed out every Monday and students will have until Friday to solve it. These problem sets will not count for the final grade, but every student must hand in on time at least 2/3 of the total (roughly 8 out of 12) to receive a passing grade. It’s acceptable to work in groups to solve the problem sets, but each student must hand in a separate solution. Solutions for each problem set will be handed out and explained at recitation.

Prerequisites and Objectives

• **Math and Econ Prerequisites:** Microeconomics (ECON-UA 11), Macroeconomics (ECON-UA 13), and Analytical Statistics (ECON-UA 20), or permission of the instructor. Keep in mind that this course is considerably more demanding than the standard intermediate macro course offered at NYU, especially in terms of the background knowledge of mathematics required. In particular, students should be more than familiar with basic calculus, functions differentiation and integration, unconstrained and constrained static optimization (Kuhn-Tucker). I will also assume that you are familiar with the language of economic analysis acquired in a Principles course.

• **Objectives:** The first objective of this course is to offer an overview of some of the most important topics studied in macroeconomics with the help of rigorous theory. We will use formal mathematical models where the behavior of optimizing agents (households, firms, government, etc.) is aggregated in the economy through the (crucial) notion of equilibrium. The second objective is to relate these topics to macroeconomic policy questions, and use the models to think about the impact of policies and “optimal” policies.

Textbooks, Reading Material and Website

• **Textbooks and class notes:** The textbook we will use every now and then is Stephen Williamson “Macroeconomics, 5/E”. I will make class notes and other reading material available in electronic form every week. Class notes will be your main source of learning.
• **Course website:** The webpage of the course, where announcements, homework, lecture notes and additional readings will be posted is

https://sites.google.com/a/nyu.edu/glviolante/teaching/mta-1

Please, make sure to check it regularly for updates, ideally every day after class.

**Course Outline**

In what follows, I outline the topics that I plan to cover in the course. This initial summary is *subject to change*, as time goes by and as we find together the right pace for the course. The updated versions of the syllabus will be posted regularly on the course website.

• **Primitives of an Economy:** Agents, Preferences, Budget constraint, Commodity set, Household problem, Production technology, Firm’s problem, Government budget constraint, Market structure.

• **Competitive Equilibrium in a Static Economy:** Formal definition of competitive equilibrium in a static economy, Comparative statics across competitive equilibria.

• **Pareto Optimality:** Social planner problem, Equivalence of equilibrium and efficient allocations, Welfare theorems.

• **Intertemporal Macroeconomics:** Introduction to dynamic optimization

• **Consumption and Savings:** Intertemporal substitution and the optimal consumption-saving decision of the household, Permanent Income Hypothesis, Motives for saving, Credit market imperfections: 1) borrowing constraints, 2) wedges between borrowing and lending rates

• **Competitive Equilibrium in a Dynamic Economy:** Definition of competitive equilibrium in a two-period production economy

• **Fiscal Policy:** Ricardian equivalence between taxes and debt in financing government expenditures, Optimal taxation, Demographic trends, Comparison between PAYG and fully-funded system, Overlapping generations models

• **Investment Theory:** Optimal investment problem of the firm with an infinite horizon, q-theory of investment, Impact of corporate taxation on investment
• **Asset Pricing:** How to price assets (stochastic discount factors), Determination of the equity premium (why stocks pay more than T-Bills), Bubbles, Understanding financial crises

• **Business Cycles:** Facts and measurement, “Real” business cycles driven by productivity shocks and “Financial” business cycles driven by financial factors

• **Labor Markets:** Unemployment, labor force participation and labor market flows, Search model, Matching model, Role of unemployment insurance and job creation subsidies

• **Economic Growth:** Empirical evidence on cross-country disparity, Growth accounting, Solow growth model, Exogenous technical change in the Solow model, AK Model, Human Capital, Growth models with R&D, Schumpeterian growth, Policy analysis in growth models, Proximate vs fundamental causes of growth, Ramsey growth model

• **Technological Change and Inequality:** Facts on the recent income inequality trends, How the direction of technical progress can affect the income distribution

• **Sovereign Default:** Small open economies, Two-country models, Sovereign default

• **Money and Monetary Policy:** Neutrality of money, Models where money has real effects, Conventional and “unconventional” monetary policy, Liquidity traps