**Faculty of Economic Sciences**

**National Research University Higher School of Economics**

Macroeconomics-3

Syllabus, Spring 2018 (modules 3-4)

1. **Course Description**
   1. **Title of the course :** Macroeconomics-3.
   2. **Pre-requisites:** Intermediate or Advanced Macroeconomics, Mathematics for Economists.
   3. **Course type:** For students in the Master’s Research Program in Economics, Macroeconomics-3 is the second semester of the compulsory year-long Advanced Macroeconomics course. For students in other programs, Macroeconomics-3 is a separate elective course.
   4. **Instructors:**

Lectures: Eren Arbatli (3rd module), Oleg Zamulin (4th module)

Sections: Kanat Isakov

* 1. **Abstract:** This course is a master’s level introductory course on Macroeconomic theory. It aims to instill a firm understanding of how economic aggregates such as total output, national saving and investment, inflation, exchange rate, trade and cross-border capital flows, current account balance are determined, and how they influence each other in a given economy. The evolution of total output can be conceptually decomposed into a long-term trend and business-cycles around this trend. Macroeconomists have developed two distinct groups of theories (e.g. employing different sets of assumptions) depending on whether they are interested in explaining the short-run dynamics or the long-run dynamics in the economy. Similarly, this course is divided into two parts. The first part of the course, taught by Eren Arbatli, is devoted to the process of trend-growth in output per capita. It offers a (not too technical) overview of a range of standard growth models, discuss their theoretical relevance and empirical success in explaining different aspects of the process of long-run economic growth and the emergence of income differences across countries. The second part of the course, taught by Oleg Zamulin, is devoted to study of components of aggregate demand (consumption and investment), basic theories of business cycle fluctuations, and fundamentals of monetary policy design.

1. **Learning Objectives**

* to provide students with the stylized facts about economic growth and business cycle and the main questions macroeconomists try to address;
* to present basic theories of economic growth and business cycle;
* introduce the students to core concepts and standard methodological tools that lay the foundation of modern macroeconomic analysis.

1. **Learning Outcomes:** At the end of the course, students are expected to show

* an awareness of the main debates and approaches in the literature on economic growth and business cycle that will help them decide on the direction of their future research;
* a basic understanding of the workings of standard macroeconomic models that will enable them to learn and work with more advanced models in the future;

1. **Reading List for Module 3 (Economic Growth)**
   1. **Required textbook**: [The Economics of Growth](https://www.amazon.com/Economics-Growth-MIT-Press-ebook/dp/B008H5Q2BG/ref=sr_1_1?s=books&ie=UTF8&qid=1501511300&sr=1-1&keywords=9780262303897) (MIT Press) by Philippe Aghion and Peter Howitt
   2. **Supplementary textbooks**:

[Economic Growth: International Edition](https://www.amazon.com/Economic-Growth-International-David-Weil-ebook/dp/B01GJQR538/ref=mt_kindle?_encoding=UTF8&me=) (3rd edition) by David Weil.

[Introduction to Modern Economic Growth](https://www.amazon.com/Introduction-Modern-Economic-Growth-Acemoglu/dp/0691132925) (Daron Acemoglu)

[Unified Growth Theory](http://odedgalor.virb.com/unified-growth-theory-princeton-universi) by Oded Galor

* 1. **Optional reading material** **(more to be added**):
     1. [Handbook of Economic Growth](http://www.sciencedirect.com/science/handbooks/15740684/1/part/PA) (Edited by Philippe Aghion and Steven N. Durlauf)
        1. [FROM STAGNATION TO GROWTH: UNIFIED GROWTH THEORY](http://media.virbcdn.com/files/ea/502e7ede11c093f7-Galor-HandbookofEconomicGrowth-Reprint.pdf) (Oded Galor)
     2. Entry on [Economic Growth](http://www.econlib.org/library/Enc/EconomicGrowth.html) by Paul M. Romer (The Concise Encyclopedia of Economics)
     3. [Why Innovation Won’t Save Us](http://economics.weinberg.northwestern.edu/robert-gordon/files/TopicalEssays/WhyInnovation.pdf) by Robert Gordon (a growth-skeptic’s take on the future of innovation-led growth)

1. **Reading List for Module 4**
   1. **Required textbook:** [Advanced Macroeconomics](https://www.amazon.com/Advanced-Macroeconomics-4th-Mcgraw-Hill-Economics-ebook/dp/B006TZOAYC/ref=mt_kindle?_encoding=UTF8&me=) (4th edition, McGrow-Hill), by David Romer
   2. Scholarly articles as assigned in this syllabus
2. **Course Plan:** The course is 20 weeks long and divided into two modules (module 3 and module 4). Each week, there will be two lectures and one section. Module 3 (January – March, 2018) is devoted to the study of economic growth. Module 4 (April – June , 2018) is devoted to short-run macroeconomic fluctuations.

**Outline of Module 3:**

**Week 1:**

* What do growth economists study and why?
  + Stylized facts of economic growth and income differences across countries
  + Taking stock: Questions and puzzles to address
  + An overview of main frameworks to analyze economic growth
  + A conceptual approach to drivers of economic growth: Proximate vs Ultimate Causes

**Required readings:** Weil (Chapters 1 & 2); AH (Introduction)

**Week 2:**

* Neoclassical Growth Theory
  + Brief overview (recap) of Solow-Swan model
  + Population and economic growth (**Required reading:** Weil, 4.1 & 4.2)
    - Population over the long-run: The Malthusian model
    - Population growth in the Solow-Swan model
  + Exogenous technological progress in Solow-Swan model
  + Growth Accounting

**Required readings:** Weil (Chapter 3: Physical capital); AH (Part I: 1.1 & 1.2); **Further reading:** MEG (2.1-2.7, 3.1-3.4)

**Week 3:**

* Neoclassical Growth Theory (continued)
  + Primer on intertemporal consumption decisions
  + Endogenous saving rates: Cass-Koopmans-Ramsey model (Canonical Neoclassical Model)
  + **Required readings:** AH (Part I: 1.3), **Optional further reading:** MEG (8.1-8.7)

**Week 4:**

* Overlapping Generations (OLG) Models
  + Baseline and Canonical OLG models
  + Role of Social security in capital accumulation
  + Capital-Skill Complementarity in an Overlapping Generations Model

**Optional reading:** MEG (9.2-9.5; 10.5)

**Week 5:**

* First generation models of endogenous growth: The AK Model

**Required reading:** AH (Part 1: 2); **optional reading:** MEG (11.2-11.2).

* Product Variety Models

**Required reading:** AH (Part 1: 3); optional reading: MEG (13.4)

**Week 6:**

* Modeling R&D: The Schumpeterian Model

**Required reading:** AH (Part 1: 4)

**Week 7:**

* Capital, innovation and growth accounting

**Required reading:** AH (Part 1: 5)

* Finance and Growth

**Required reading:** AH (Part 2: 6)

**Week 8:**

* Technology transfer and cross-country convergence

Required reading: AH (Part 2: 7)

* Stages of Growth
  + From stagnation to growth
  + From capital accumulation to innovation
  + From manufacturing to services

**Required reading:** AH (Part 2: 10)

**Week 9:**

* Institutions and nonconvergence traps

**Required reading:** AH (Part 2, 11)

**Optional readings:**

* Acemoglu, Daron, Simon Johnson, and James A. Robinson. "Institutions as a fundamental cause of long-run growth." *Handbook of economic growth* 1 (2005): 385-472.

**Week 10:**

* Q&A session and written control

**Outline of Module 4:**

**Week 11-12:**

* Consumption under uncertainty
  + Introduction to life cycle and permanent income hypotheses
  + Empirical puzzles in consumption: excess smoothness and excess sensitivity
  + Extensions: Precautionary savings, hyperbolic discounting, and habit formation

**Readings:**

* + Romer, Ch.8

**Week 13-14:**

* Investment
  + Neoclassical model, convex adjustment costs
  + Non-convex adjustment costs
  + Investment under uncertainty
  + Extensions: Credit rationing

**Readings:**

* + Romer, Ch.9
  + Abel, Andrew, Avinash Dixit, Janice Eberly, and Robert Pindyck, “Options, the Value of Capital, and Investment ,” QJE 111(3), August 1996, pp.753-777
  + Caballero, Ricardo, “Aggregate Investment,” Handbook of Macroeconomics, edited by J. Taylor and M. Woodford, North Holland, 1999, pp. 813-62
  + Joseph E. Stiglitz and Andrew Weiss, “Credit Rationing in Markets with Imperfect Information,” AER 71 (June 1981). Reprinted in New Keynesian Economics, N.Gregory Mankiw and David Romer, eds.

**Week 15-16:**

* Neoclassical business cycle theory
  + Facts about business cycle
  + Overview of business cycle theory
  + Real business cycle model
  + Critique of the real business cycle model

**Readings:**

* + Romer, Ch.5
  + Campbell, John, “Inspecting the Mechanism: An Analytical Approach to the Stochastic Growth Model,” *Journal of Monetary Economics,* 1994, 33, pp. 463-506
  + King, R. and Sergio Rebelo, “Resuscitating Real Business Cycles,” Chapter 14, Volume 1B, *Handbook of Macroeconomics*, 1999, J.Taylor and M.Woodford eds, North Holland, pp.927-1007

**Week 17-18:**

* New Keynesian Economic Theory
  + Microfoundations of price rigidities
  + Taylor model of staggered price setting
  + Calvo model and New Keynesian Phillips Curve

**Readings:**

* + Romer, Ch.6-7

**Week 19:**

* Foundations of monetary policy

**Readings:**

* + Romer, Ch.11
  + Clarida, Richard, Jordi Gali and Mark Gertler, “The Science of Monetary Policy: A New Keynesian Perspective,” *Journal of Economic Literature 37*, December 1999, pp. 1661-707. Sections 1-3.

**Week 20:**

* Q&A session and wrap-up

1. **Grading System :**

For students in the Masters Research Program in Economics the final course grade will be the weighted average of (1) first-semester grade in the Advanced Macroeconomics (40%) and (2) second-semester grade for Macroeconomics-3 (60%). In order to get a passing grade from this year-long course, students in the research program need to get a passing grade (4/10 or above) in each part (each semester) of the Advanced Macroeconomics course. For all other students (e.g. those from Applied Masters Program in Economics), Macroeconomics 3 is an elective stand-alone course and the final grade will reflect performance in this course alone.

The grade for Macroeconomics-3 is determined by:

* Two end-of-module written in-class controls (40% each)
* Four home assignments (5% each), two assignments in each module

1. **Guidelines for Knowledge Assessment:**

**Home assignments:** Two home assignments in each module will contain problems that will test your analytical thinking skills and your ability to analyze the models (and their slightly modified versions) we covered in the lectures, i.e. solving the models, discussing their predictions and summarizing the lessons that can be drawn from them.

**Written controls:** Two controls (at the end of each module) will contain problems similar to those in home assignments as well as some short questions testing students’ knowledge of the stylized facts and core concepts mentioned in the lectures.