

**Syllabus**  
**ECO602: Macroeconomic Theory I: Growth Theory**  
**MSc Economics Program**  
**American University of Central Asia**  
**Fall Term**

Instructor: Nurgul Ukueva, Ph.D.  
Office: Aaly Tokombaeva street 7/6, Bishkek, Kyrgyz Republic  
Email: ukueva\_n@auca.kg  
Class Time: Saturday 12:45-14:00 and Saturday 14:10-15:25  
Office Hours: TBA

**Course description:** This course is designed to provide an introduction to the fundamentals of macroeconomic theory and policy. The course will be taught from a dynamic general equilibrium perspective. We will study macroeconomic models based on microeconomic foundations with economic agents that optimize and variables that satisfy aggregate consistency conditions. This part of the Macroeconomics sequence in the Program presents an introduction to macroeconomic modeling, focusing on the theory of economic growth and some of its applications. It will introduce a number of models of macroeconomic equilibrium. It will use these models to shed light both on the process of economic growth at the world level and on sources of income and growth differences across countries. The objective of the course is

- to familiarize you with a set of issues and questions that are central to macroeconomics, and that are also (hopefully) exciting and important;
- to develop some of the most important tools of dynamic economics useful in macroeconomics as well as in a number of sub disciplines of economics including general equilibrium theory, political economy, industrial organization and contract theory;
- to provide you with a number of workhorse models useful in multiple areas of macroeconomics.

**Text:**

David Romer *Advanced Macroeconomics*, 3d edition, McGraw-Hill Irwin 2006.

Acemoglu, Daron. *Introduction to Modern Economic Growth*. Princeton, NJ: Princeton University Press, 2008. ISBN: 9780691132921.

Lecture notes and additional material will be used for discussing economic policy issues

## Outline of the material to be covered in class:

### 1. **Introduction. Classical Theory: the Economy in the Long-run**

The Science of Macroeconomics. The Data of Macroeconomics. National Income: Where It Comes from and Where It Goes. Money and Inflation. The Open Economy. Unemployment

### 2. **Introduction to Long run Economic Growth**

Growth facts, Economic Growth and Convergence across Countries: Population and capital accumulation, Productivity and Technology.

### 3. **Solow growth model**

Solow growth model, the fundamental causes of growth. Questions we look at: How does production and living standards evolve over time, through decades (or centuries)? Why do they differ so much across countries? What can policy do to affect that?

The Solow growth model is a workhorse for many macroeconomic applications, and it is the starting place for the modern theory of economic growth. Here we begin with the basics of this model, which will already be familiar to many of you.

### 4. **Neo-classical Growth Model: Factor Accumulation**

The neoclassical growth model differs from the Solow growth model in incorporating consumer optimization. This lecture sets up the dynamic maximization problem corresponding to optimal growth in the context of the neoclassical model, reviews the first and second welfare theorems from basic microeconomics, and discusses how they apply in the dynamic, infinite-horizon models.

### 5. **Endogenous Growth Models** This lecture first presents a model of sustained growth using a variant of the neoclassical growth model, then presents the first example of a model with endogenous growth due to the knowledge-base or the technology stock of the society expanding over time, and finally discusses the reasons why modeling sustained economic growth with externalities is unsatisfactory and what special set of issues emerge in modeling technological change. This lecture also briefly discusses the role of human capital in economic growth and introduces some basic models that are useful for thinking about human capital investments.

### 6. **Interdependences: human capital, technology diffusion, trade, and the world income distribution in an open economy**

The models discussed up to this point in the class are closed economy models. These are not good approximations to the world we live in, where international trade and exchange of ideas are important. This lecture provides an overview of major interdependences across countries

that arise both because of technology diffusion and international trade. The emphasis is on how these interdependences fundamentally affect the process of economic growth and the world distribution of income.

**Course webpage:** All additional course materials, including assignments, and announcements will be posted on Resources or distributed via e-mail.

**Exams:** There will be 2 in class midterm exams and one final exam. Exams are closed-book and closed-note. The final exam will be comprehensive. The exam dates are:

- Midterm I:
- Midterm II:
- Final Exam:

**Grading:** The final grade will be based on the assignments and presentations (10%), 2 midterms (30% each) and a final exam (30%). If you do well on the final, your worst midterm grade will be replaced by your final grade. In addition, your worst assignment will be dropped from the final grade. No make-up exams or assignments will be provided.

**Assignments and presentations:** Throughout the semester students will have several assignments (problem sets short essays). Each student has to also make a presentation on economic and economic policy related issues of Central Asian countries, relating the presentations to the material of the course.

**Academic integrity:** I expect students to conform to the AUCA's Honor Code and do my part to enforce it.