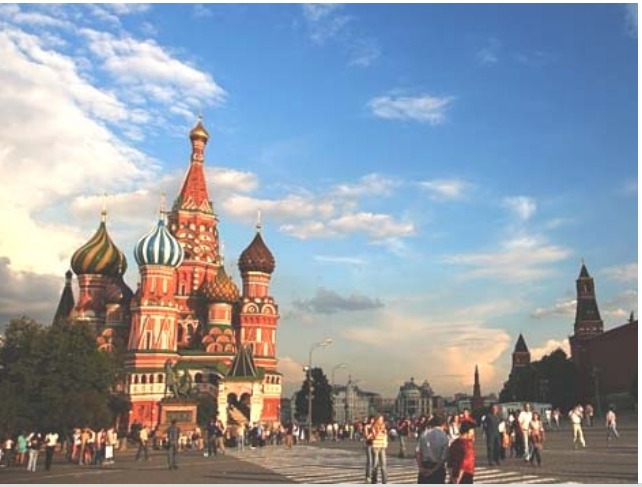
ENJOY YOUR STAY IN MOSCOW



Moscow is the capital of Russia and the largest city in Europe.

For centuries, Moscow has been Russia's heart – in culture, business and science. Many museums, galleries, theatres and concerts are at the visitors' disposal.

We will offer school's participants a number of various social events.

Moscow lies in the continental climate zone, a typical summer temperature is 22-26 °C.

LEARN MORE ABOUT ECONOMICS & MATHS

Graduate students
in economics and applied mathematics!
You are welcome to register for EGMD
at www.agora.guru.ru/EGMD_2009

Registration dates:
1 November, 2008 — 1 March, 2009

Registration fee per one-week course:
500 Euros
Upon special agreement with an applicant's university the Program Committee can provide a fellowship to compensate for the applicant's registration fee

Accommodation/meals/transportation:
Paid by participant

Contact: Dr. Elena Rovenskaya erovenskaya@cs.msu.su

EGMD PROGRAM

• three courses on modern mathematical approaches to assessment of economic growth
• examination and an EGMD certificate in each course
• three general lectures by world recognized experts

EGMD working language: English

Daily plan:

• four academic hours of lectures
• four academic hours of seminars
• four academic hours of exercises

www.agora.guru.ru/EGMD_2009

Summer School
at Moscow State University

EGMD
Moscow 2009

Economic Growth: Mathematical Dimensions

5-26 July 2009

Lomonosov Moscow State University
Moscow, Russia
www.msu.ru

Steklov Mathematical Institute,
Russian Academy of Sciences, Moscow, Russia
www.mi.ras.ru

International Institute for Applied Systems Analysis
Laxenburg, Austria
www.iiasa.ac.at

FIRST-WEEK EGMD COURSE: JULY 6-11, 2009

Corresponding Member
of the Russian Academy of Sciences
Sergey Aseev

Steklov Mathematical Institute, Russia

Infinite-horizon Optimal Control with Applications in Growth Theory

The course provides an introduction to the optimal control theory with a focus on problems arising in growth theory.

Typically, optimal economic growth problems assume that the growth process is endless, which gives rise to specific mathematical features of the Pontryagin maximum principle. Namely, so-called adjoint variables (treated as “shadow prices”) may exhibit a “pathological” behavior in the long run which prevents from the application of a standard versions of the Pontryagin maximum principle and appeals to developing new modifications of the Pontryagin technique, which would pay special attention to the above-mentioned “pathology”.

The course introduces the recently developed “finite-horizon approximation” approach to deriving a modified maximum principle targeted specifically to infinite-horizon problems of optimal control is presented. The attention is focused on the characterization of the behavior of Pontryagin’s adjoint variables and Hamiltonian in a neighborhood of infinity. The developed methodology is illustrated by a few meaningful examples from growth theory.

SECOND-WEEK EGMD COURSE: JULY 13-18, 2009

Professor Gerhard Sorger
University of Vienna, Austria

Economic Growth Theory

The course provides an introduction to the modern economic growth theory. We start with a discussion of some of the most prominent empirical facts about the long-run evolution and the cross-country differences of income levels and economic growth rates, which motivate the central questions of economic growth theory. We introduce the aggregate production function and the capital accumulation equation, two of the basic ingredients of any growth model. Subsequently, the simplest neoclassical growth model, the Solow-Swan model is studied.

In the second part of the course we formulate and analyze the Ramsey-Cass-Koopmans model and the Diamond model of economic growth. These are the most important neoclassical growth models and they are widely used in macroeconomics.

The third part of the course deals with some aspects of the so-called “new growth theories” which have been developed during the last two decades. We deal in particular with the role of human capital formation in explaining the cross-country income differences, and with models of technological change (both horizontal and vertical innovations).

THIRD-WEEK EGMD COURSE: JULY 20-25, 2009

Professor Thomas Weber
Stanford University, USA

Dynamic Optimization with Applications in Economics

The course provides an overview of classical and nonclassical optimal control applications in economics. The approach is hierarchical.

First we discuss single-person decision problems in which a firm or a social planner maximizes an objective function subject to certain constraints. Applications include dynamic pricing, investment, marketing, and the harvesting of renewable resources.

Second we introduce games in which several decision makers interact, either in a leader-follower (Stackelberg) setting or in a situation where all players reach their decisions simultaneously. Applications include dynamic oligopolies with open and closed-loop equilibria, capital accumulation games, and the dynamic pricing with a strategic buyer.

In the third part of the course, we look at problems, which involve the design of economic mechanisms for the interaction of different players. Applications include screening, market design, and dynamic auctions.

MOSCOW STATE UNIVERSITY

Lomonosov Moscow State University is the leading university in Russia. MSU offers 29 faculties for study. Since the middle of the 18th century, MSU has developed highest standards in basic education. More than 40,000 undergraduate students and 7,000 graduate students study at MSU today; 4,000 professors/lecturers and 5,000 researchers work at MSU departments and research laboratories.