**Syllabus of the course**

“Advances in Decision Making Theory and Applications”

Moscow, 2018

**Lecturer** – Professor, Dr. Fuad Aleskerov (National Research University Higher School of Economics and Institute of Control Sciences of Russian Academy of Sciences)

*Lectures 1 - 2* (4 hours). **Decision Making – why, when and under which circumstances? Aggregation models.**

Main notions and phases of decision making process are presented. Main models on multicriterial and collective decision making are given. All models are widely illustrated via examples.

*Lecture 3* (2 hours). **Applied models**

Analysis of customers’ behavior for large network. Efficiency of bank branches. Key borrowers in a banking system. Location of branches of a firm. Efficiency of retail network. Analysis of living conditions in settlements and regions.

*Lecture 4.* (2 hours) **In which circumstances and why political decisions are made?**

Public goods. Elections and referenda. Participation in elections. Informing voters.

*Lectures 5-6.* (4 hours) **Voting and Manipulation in Voting**

Some excursion in history. How a voter's opinion is described? Arrow's Paradox. Sen's Paradox. Manipulation in voting. Voting procedures in elections. The interchange of votes (log rolling). Voting by feet.

*Lecture 7-8.* (4 hours). **Power distribution in organizational bodies.**

Main notions. Coalitions. Classic power indices. Power indices taking into account preferences of agents to coalesce. Applications to banks, IMF, European Parliament.

Prerequisites: Math at high school level