Microeconomics 1

Module 1, AY 2020-2021

Andrei v. Bremzen
NES
abremzen@nes.ru

Course information

Course Website: my.nes.ru

Instructor's Office Hours: by appointment

Class Time: Tuesday 15.30-18.45

Room Number: 114

TA: Alexander Kalchevskiy, akalchevskiy@nes.ru

Course description

This is the first course of the two in microeconomics at FIB; it is focused on consumer theory (how people choose what to consume, in contrast with how firms choose what to produce, which is the subject of Micro 2). We will also cover exchange economy and basics of game theory.

Course requirements, grading, and attendance policies

There will be up to four home assignments that count for 20% of the grade; in-class midterm and final exams will count for, respectively, 20% and 50% of the grade. For the other 10% of the grade, you will have to hand in an 'economic naturalist' assignment, as invented and described by Robert H. Frank (see his paper for detailed description and examples); the only twist is that it has to be based on a phenomenon you personally observe here in Russia, or the country where you come from. This paper can be written in either Russian or English and has to be no longer than 500 words. It is due at 10 pm on Sunday week 8.

Course contents

The course will cover basic consumer theory. The topics include:

1. Introduction - why we need models.
2. Preferences and utility.
3. Elasticities. Income and substitution effects. Complements and substitutes.
4. Exchange economy and the role of trade. Edgeworth box.
5. Uncertainty and information. Expected utility theory.
6. Asymmetric information. Moral hazard and adverse selection.
7. Introduction to game theory. Nash equilibrium and subgame perfect Nash equilibrium.

Description of course methodology

While I will mostly be talking in the classroom, occasionally I will expect students to answer questions that I pose, for which it is helpful that you read a chapter ahead of what was covered last time. I do not use slides which means that you have to be in class to take notes. If you have to miss a class, you should ask your classmate(s) what was covered *before* the next class; believe me, it is more time efficient to attend than to recover what was covered.

A student is fined 500 rub if his/her phone goes off during class. This money is used to finance coffee/tea of my choice for the faculty lounge.

Sample tasks for course evaluation

1. Derive demand function for the preferences described by the following utility functions:
   (a) $u(x_1, x_2, x_3) = \min\{x_1 x_2; x_1 x_3\}$
   (b) $u(x_1, x_2, x_3) = x_1 + x_2 x_3^2$

2. Consider an agent who can exert a costly effort e, which can take two possible values – a zero effort level and a positive effort of one: $e \in \{0, 1\}$. Exerting effort e implies a disutility for the agent which is equal to $c(e)$ such that $c(0) = 0$ and $c(1) = 1$. His expected utility function is $U_A(w, e) = w^{1/3} - c(e)$ where w is the wage received, and his reservation utility is $u_0 = 1$. A principal is risk-neutral.

   Production is stochastic and effort affects the production level as follows. The stochastic production level y can only take two values $\{y_l, y_h\}$, and the stochastic influence of effort on production is characterized by the probabilities $p(e = 0) = 0.2$, and $p(e = 1) = p_1$.

   Assume that the principal can observe level of effort.
   (a) Derive optimal wage bundles (w_0, w_1) for $e = 1$ and $e = 0$.
   (b) Suppose $\{y_l, y_h\} = \{10, 110\}$. For which values of p_1 will the principal offer a contract that induces high level of effort, i.e. $e^* = 1$?

(c) Redo part (b) for $\{y_l, y_h\} = \{16, 24\}$.

Assume further that the principal can observe only the output level, and $p_1 = 0.6$.

(d) Find optimal wage bundle (w_l, w_h) for $\{y_l, y_h\} = \{16, 24\}$.

(e) Find optimal wage bundle (w_l, w_h) for $\{y_l, y_h\} = \{10, 110\}$.

Course materials

Required textbooks and materials

The basic textbook for the class is *Microeconomics* by Robert Pindyck and Daniel Rubinfeld (we will focus on chapters 3,4,5 and 13). It is available from the library.

Additional materials

A somewhat more advanced textbook is *Microeconomic Theory* by Walter Nicholson. It is also available from the library.

Academic integrity policy

Cheating, plagiarism, and any other violations of academic ethics at NES are not tolerated.