

УТВЕРЖДЕНО

ученым советом НИУ ВШЭ

протокол от 26.04.2019 г. № 6

Приложение 2

к Положению о программе учебной дисциплины образовательных программ высшего образования – программ бакалавриата, специалитета, магистратуры НИУ ВШЭ

Model form

*Approved by the Academic council
of the Education programme*

Protocol No. ____ from __. __. 20

Syllabus
Title of a Course
(N ECTS)

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Meeting Minute # ____ dated _____ 20

1. Course Description

Pre-requisites: basic knowledge of: calculus, linear algebra and probability theory.

Abstract: This course is an introduction to the modern methods of theoretical and empirical analysis of auctions. We will talk about the four most commonly used auction formats: sealed-bid, open, scoring and double auctions; learn to distinguish them from each other and understand why a given format is chosen in each particular environment. We will learn how to model auctions using games of incomplete information with continuous types, and how to solve these models. A strong emphasis will be put on the mechanism design approach and the application of the envelope theorem. The celebrated revenue ranking result will be discussed. Furthermore, we will learn how models can be used in empirical work, see how these models can be estimated and simulated. At the end of the course students will practice presenting a mock empirical exercise.

2. Learning Objectives

- know the basics of mechanism design
- know the taxonomy of auctions
- know the basics of theoretical and empirical analysis of auctions;

3. Learning Outcomes

- be able to set and solve simple auction models;
- be able to estimate and simulate simple auction models;
- be able to make a presentation

4. Course Plan

No	Topic/Focus /Activity	Week	Readings
1	Course overview and auctions taxonomy: <ul style="list-style-type: none">▪ sealed vs open▪ multi-unit, multi-dimensional▪ first vs second price▪ reserve prices, collusion▪ auction theory vs empirics: the prime and dual problems	1	Krishna chapters 1.2, 1.6, 1.11, 2.12 Introductions to Che, Kyle and Asker papers. Lecture notes
2	Equilibria in private value auctions: <ul style="list-style-type: none">▪ first price auctions▪ second price auctions▪ revenue comparison▪ reserve prices	2	Krishna ch1.2
3	Introduction to mechanism design <ul style="list-style-type: none">▪ revelation principle▪ envelope theorem▪ revenue equivalence	3	Krishna ch1.3

4	Efficiency vs optimality <ul style="list-style-type: none"> ▪ IC, IR constraints ▪ efficient mechanisms ▪ optimal mechanisms 	4	Krishna ch1.5
5	English auctions, common value	5	Krishna ch1.6
6	Scoring auctions, Double auctions	6	Krishna ch2.12, Che paper, Lecture notes
7	Collusion, Corruption	7	Krishna ch1.11, Asker paper, Lecture notes
8-9	Confronting your model with the data <ul style="list-style-type: none"> ▪ Estimation, Simulation ▪ Identification, Heterogeneity Presenting a mock empirical exercise	8-9	Lecture notes

5. Reading List

Required: Vijay Krishna, Auction Theory, Second Edition;

Optional:

- Yeon-Koo Che, Design competition through multidimensional auctions, RAND
- Albert Kyle, Imperfect speculation with imperfect competition, RES
- John Asker, A study of the internal organization of a bidding cartel, RAND

6. Grading System

Grades will be determined on the basis of your performance on home-works, midterm and final exams out of 100 points. Course grade is calculated according to the following formula:

$$G_{\text{Final}} = 0.25G_{\text{Midterm}} + 0.25G_{\text{HW}} + 0.5G_{\text{Exam}}$$

G_{Midterm} - midterm grade, G_{Exam} – final exam grade, G_{HW} - homework grade

There will be 5 written homeworks, equally weighted. Fewer problems will be graded than given. The main goal of homeworks is self-practice.

There are no make-ups for midterms and homeworks.

If a student needs to skip a midterm or homeworks he can do so given a valid reason (medical urgency - медицинская справка) and a preemptive written warning (email) to the Instructor. In this case, the respective grades will be ignored and the final grade will be the weighted average of the remaining grades.

The exam will be taken at the end of the module. Those with a valid reason can retake the exam with no penalties, but the problems can be different.

Final grade is calculated out of 100 and then converted to the 10-points in accordance with the following scheme:

Final grade out of 100 points	10-points scale
0	0
1-10	1
11-19	2
20-29	3
30-35	4
36-44	5
45-52	6
53-59	7
60-64	8
65-74	9
75 and higher	10

The conversion scale might be adjusted by 10 points out of 100 upon the exam results. A passing grade is more than 3 out of 10.

A student without a passing grade can have up to 2 make-up. The first make-up exam is graded by the Instructor while the second is graded by a committee of 3 and more people, including the Instructor. The final grade after the first make-up exam is determined by the same formula as after the main exam:

$$G_{\text{Final}} = 0.25G_{\text{Midterm}} + 0.25G_{\text{HW}} + 0.5 G_{\text{Make-up1}}$$

The final grade after the second make-up exam is determined by a different formula:

$$G_{\text{Final}} = \max(G_{\text{Make-up2}}, 0.25G_{\text{Midterm}} + 0.25G_{\text{HW}} + 0.5 G_{\text{Make-up2}}).$$

7. Examination Type: written

8. Methods of Instruction: lectures (4 hours a week), lecture notes