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**Federal State Autonomous Educational Institution of Higher Education
«Peoples' Friendship University of Russia named after Patrice Lumumba»
(RUDN University)**

Higher School of Management

(name of the main educational unit-developer of the basic higher education programme)

COURSE SYLLABUS

Econometrics (Advanced)

(name of discipline/module)

Recommended by the Didactic Council for the Education Field of:

38.04.01 «ECONOMICS»

(code and name of the area of training/specialty)

**The study of the discipline is conducted as part of the professional programme of
higher education:**

«Compliance control in the activities of organizations»

(name (track/specialization) of professional programme of higher education)

1. COURSE GOAL(S)

The main goal of the discipline “Econometrics (advanced course)” is to prepare students for applied research in the field of constructing econometric models used in knowledge-intensive industries, their identification and forecasting.

- The main objectives of the course are:
- students’ acquisition of knowledge about econometric methods;
- development of skills in using these methods in the study of economic objects and processes;
- development of skills in constructing econometric models and checking their identification;
- development of skills for estimating model parameters, forecasting and assessing the accuracy of forecasts;
- development of research skills (systematization, research of statistical data and conclusions).

2. REQUIREMENTS FOR LEARNING OUTCOMES

Mastering the discipline “Econometrics (advanced course)” is aimed at developing in students the following competencies (parts of competencies):

Table 2.1. The list of competencies acquired by students in the course of the discipline (outcomes of the discipline)

Competence Code	Competence Descriptor	Competence Formation Indicators (within this discipline)
GC-3	Able to organize and manage the work of a team, developing a team strategy to achieve the goal	GC-3.1. Defines his role in the team based on the strategy of cooperation to achieve the goal; GC-3.2. Formulates and takes into account in its activities the behavioral characteristics of groups of people identified depending on the goal; GC-3.3. Analyzes the possible consequences of personal actions and plans his actions to achieve a given result; GC-3.4. Exchanges information, knowledge and experience with team members; GC-3.5. Argues his point of view regarding the use of ideas of other team members to achieve the goal; GC-3.6. Participates in team work to complete assignments.
GPC-2	Able to apply advanced instrumental methods of economic analysis in applied and/or basic research	GPC-2.1. Has knowledge of advanced instrumental methods of economic analysis; GPC-2.2. Able to apply knowledge of advanced instrumental methods of economic and financial analysis when conducting applied and/or fundamental research;
GPC-5	Able to use modern information technologies and	GPC-5.1 Knows modern information technologies and software used in solving professional problems GPC-5.2 Able to choose among modern information technologies and software tools the

Competence Code	Competence Descriptor	Competence Formation Indicators (within this discipline)
	software when solving professional problems	most effective ones for solving professional problems. GPC-5.3 Has full skills in solving standard problems of professional activity using information technology and software.

3. COURSE IN HIGHER EDUCATION PROGRAMME STRUCTURE

The discipline “Econometrics (advanced course)” refers to the compulsory part/part formed by participants in educational relations of block B1 of general education programmes of higher education (EP HE).

Table 3.1 shows the previous and subsequent disciplines aimed at developing the discipline’s competencies in accordance with the competence matrix of the EP HE.

As part of the EP HE, students also master other disciplines and/or practices that contribute to achieving the planned results of mastering the discipline “Econometrics (advanced course)”.

Table 3.1. The list of the higher education programme components that contribute to the achievement of the expected learning outcomes as the disciplines results

Competence Code	Competence Descriptor	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
GC-3	Able to organize and manage the work of a team, developing a team strategy to achieve the goal		Corporate finance and financial analysis Financial planning and budgeting Strategic management Investment management Rationing and remuneration High-tech industries and clusters Big Data Marketing Analytics Undergraduate practice Research work of master's students
GPC-2	Able to apply advanced instrumental methods of economic analysis in applied and/or basic research		Macroeconomics (advanced course) Analysis and regulation of industry markets Undergraduate practice Research work of master's students
GPC-5	Able to use modern		Crisis management and organization reengineering

Competence Code	Competence Descriptor	Previous disciplines/modules, practices*	Subsequent disciplines/modules, practices*
	information technologies and software when solving professional problems		Project management Corporate risk management Information Security Strategic management Investment management Business valuation and company value management Peculiarities of pricing in knowledge-intensive industries Undergraduate practice Research work of master's students

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the discipline “Econometrics (advanced course)” is 3 credit units.

Table 4.1. Types of educational work by periods of mastering BP HE for full-time education

Type of academic work	Total hours	Semesters (training modules)
		1 (2)
<i>Contact work, academic hours</i>	27	27
Including:	-	-
Lectures	9	9
Practical exercises (PE)	9	9
Seminars (S)	9	9
Laboratory work (LW)	-	-
<i>Independent work of students, academic hours</i>	63	63
<i>Control (exam/test with assessment), academic hour</i>	18	18
Total workload	108	108
<i>academic hours</i>	3	3
<i>credit units.</i>		

5. COURSE CONTENTS

Table 5.1. The content of the discipline (module) by type of academic work

Name of the sections (subjects) of the discipline	Summary of the sections (subjects) of the discipline:	Type of educational work*
<i>Section 1. Fundamentals of Econometrics</i>	Fundamentals of Econometrics	L, S

Name of the sections (subjects) of the discipline	Summary of the sections (subjects) of the discipline:	Type of educational work*
<i>Section 2. Numerical characteristics of statistical data</i>	Numerical characteristics of statistical data	L, S
<i>Section 3. Paired Linear Regression Model</i>	Paired linear regression model	L, S
<i>Section 4. Multiple regression analysis</i>	Multiple regression analysis	L, S
<i>Section 5. Checking the quality of the regression equation and its parameters</i>	Checking the quality of the regression equation and its parameters	L, S
<i>Section 6. Nonlinear regression models and their linearization</i>	Nonlinear regression models and their linearization	L, S
<i>Section 7. Multicollinearity. Autocorrelation. Heteroscedasticity</i>	Multicollinearity. Autocorrelation. Heteroscedasticity.	L, S
<i>Section 8. Modeling of dynamic processes</i>	Modeling of dynamic processes	L, S
<i>Section 9. Adaptive forecasting methods</i>	Adaptive forecasting methods	L, S

* - only for **full-time** education: L – lectures; LW – laboratory work; S – practical/seminar sessions.

L-lectures

S-seminar classes

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Equipment and technological support of the discipline

Classroom Type	Equipment of the Classroom	Specialized educational/laboratory equipment, software and materials for mastering the discipline (if necessary)
Lecture Hall	An auditorium for conducting lecture-type classes, equipped with a set of specialized furniture; board (screen) and technical means of multimedia presentations.	21 workstations: system unit P4 C2D/3160 MHz MB/ 320 GB/DVD±RW/ LCD monitor 19"+ 1 projector

Classroom Type	Equipment of the Classroom	Specialized educational/laboratory equipment, software and materials for mastering the discipline (if necessary)
Laboratory	An auditorium for conducting laboratory work, individual consultations, ongoing monitoring and intermediate certification, equipped with a set of specialized furniture and equipment.	21 workstations: Celeron system unit /2600 MHz/1280 MB/ 40 GB/DVD ROM/ LCD monitor 17"+ 1 projector + WiFi access point
Colloquium	An auditorium for conducting seminar-type classes, group and individual consultations, ongoing monitoring and intermediate certification, equipped with a set of specialized furniture and technical means for multimedia presentations.	21 workstations: system unit P4 C2D/3160 MHz MB/ 320 GB/DVD±RW/ LCD monitor 19"+ 1 projector
Computer class	Computer class for conducting classes, group and individual consultations, ongoing monitoring and intermediate certification, equipped with personal computers (in the amount of ___ pcs.), a whiteboard (screen) and technical means for multimedia presentations.	21 workstations: Celeron system unit /2600 MHz/1280 MB/ 40 GB/DVD ROM/ LCD monitor 17"+ 1 projector + WiFi access point
Autonomous Work of Students	An auditorium for independent work by students (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with access to the electronic information and educational system.	Classroom No. 420

7. RESOURCES RECOMMENDED FOR COURSE STUDY

Main Readings:

1. Econometrics by Bruce Hansen (author)

Additional Readings:

2. Introductory Econometrics: A Modern Approach (MindTap Course List) 7th Edition.

Scientific Journals:

1. 1. Quantile.
2. 2. Applied econometrics.
3. 3. Economics and mathematical methods.
4. 4. Economic science of modern Russia.

Resources of the information and telecommunications network “Internet”:

a) software: Windows, standard Office package, Internet browser and TUIS RUDN University; Microsoft Excel (minimum requirements) or one of the statistical data processing packages: Statistica, SPSS, Eview, Stata, Stadia, etc.

b) databases, information, reference and search systems:

1. World Bank Database [Electronic resource] – Access mode: <http://data.worldbank.org/>.
2. RUDN Library [Electronic resource] – Access mode: <http://lib.rudn.ru>.
3. US Bureau of Labor Statistics [Electronic resource] – Access mode: <http://www.bls.gov/>.
4. Scientific electronic library [Electronic resource] – Access mode: www.elibrary.ru.
5. Russian State Library [Electronic resource] – Access mode: <http://www.rsl.ru/>.
6. Statistics of OECD countries [Electronic resource] – Access mode: <http://www.oecd.org/statistics/>.
7. Universal database, collections of journals, statistical collections [Electronic resource] - Access mode: <http://www.eastview.com>.
8. Educational portal of the Faculty of Economics of RUDN University [Electronic resource] – Access mode: <http://economist.rudn.ru/run/course/?cid=337>.
9. Federal State Statistics Service [Electronic resource] – Access mode: <http://www.gks.ru>.
10. Central Bank of the Russian Federation [Electronic resource] – Access mode: www.cbr.ru.

Educational and methodological materials for independent work of students when mastering a discipline/module:*

1. A course of lectures on the discipline “Econometrics (advanced course)”.
2. Educational and methodological materials for students’ independent work are posted in accordance with the current procedure on the discipline page in the Telecommunication Educational Information System

8. ASSESSMENT TOOLKIT AND GRADING SYSTEM* FOR EVALUATION OF STUDENTS' COMPETENCES LEVEL UPON COURSE COMPLETION

The discipline is of an applied nature and is aimed at mastering (consolidating, improving) practical skills in processing economic information, constructing, testing and interpreting regression models, as well as using them in practical activities to identify connections between economic phenomena, as well as to predict economic processes.

As a result of independent work, the student must master the following competencies:

- the ability to organize and manage the work of a team, developing a team strategy to achieve the goal (UC-3);
- ability to apply advanced instrumental methods of economic analysis in applied and/or fundamental research (GPC-2);
- ability to use modern information technologies and software when solving professional problems (GPC-5);
- ability to manage projects for reengineering business processes of an industrial organization using modern information technologies (ПК-16).

Certification is based mainly on the assessment of the student's independent work in completing practical assignments and homework. In addition, it is possible to prepare abstracts, presentations, reports both on the theory of econometrics and on the results of independent research for speaking at a seminar, preparing abstracts or a scientific article for publication in a scientific periodical.

Certification of students in the course "Econometrics (advanced course)" is carried out using a point-rating system:

The maximum number of points is 100.

Number of credits – 4.

The maximum number of points for completing each type of work:

1. survey – 20 points
2. fulfillment of homework – 20 points
3. work in class – 20 points
4. report – 10 points
5. intermediate CD – 10 points
6. final CD – 20 points;

An **unsatisfactory** grade is given on the form F (2); FX (2+).

The F (2) grade is given if the student scores less than 30 points, the FX (2+) grade is 31-50 points. The FX (2+) grade provides an opportunity to retake the exam or test.

A **satisfactory** grade is given on Form E (3); D (3+). A grade of E (3) is given if the student scores between 51 and 60 points. Grade D (3+) – subject to 61-68 points.

The grade «**good**» is given in Form C (4) provided that the student scores 69-85 points.

The **excellent** grade is on Form B (5); A (5+). A grade of B (5) is assigned if the student scores 86-94 points and indicates that all required course requirements have been met. Grade A (5+) - 95-100 points is given not only if all requirements are met, but also with the obligatory manifestation of a creative attitude to the subject, the ability to find original answers not contained in textbooks, the ability to work with sources contained in additional literature course, the ability to combine the knowledge gained in this course with knowledge of other disciplines.

Point-rating system	Traditional assessments of the Russian Federation	Ratings ECTS
95 – 100	Excellent – 5	A (5+)
86 – 94		B (5)
69 – 85	Good – 4	C (4)
61 – 68	Satisfactory – 3	D (3+)
51 – 60		E (3)
31 – 50	Unsatisfactory – 2	FX (2+)
0 – 30		F (2)
51 - 100	Test	Passed

Materials for assessing the level of mastery of educational material in the discipline “Econometrics (advanced level)” (evaluation materials), including a list of competencies indicating the stages of their formation, a description of indicators and criteria for assessing competencies at various stages of their formation, a description of assessment scales, standard test tasks or other materials necessary for assessing knowledge, abilities, skills and (or) operational experience characterizing the stages of development of competencies in the process of mastering the educational programme, methodological materials defining procedures for assessing knowledge, abilities, skills and (or) operational experience characterizing the stages of formation competencies, developed in full and available to students on the discipline page in Telecommunication Educational Information System RUDN.

DEVELOPERS:

**Head of the Department of
Compliance and Controlling**



J. Ragulina

Position, educational department

Signature

Name and surname

HEAD OF EDUCATIONAL DEPARTMENT:

**Head of the Department of
Compliance and Controlling**



J. Ragulina

Name, educational department

Signature

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HEAD OF HIGHER EDUCATION PROGRAMME:

**Head of the Department of
Compliance and Controlling**



J. Ragulina

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