

**Программа учебной дисциплины «Научно-исследовательский семинар  
«Методология научных исследований и методы обработки данных»**

Утверждена  
Академическим советом ОП  
«Экономика»  
Протокол №1 от 26.08.2019

Разработчики	Леонова Л.А., доцент, кафедра математической экономики Креховец Е.В., старший преподаватель, кафедра экономической теории и эконометрики
Число кредитов	4
Контактная работа (час.)	59
Самостоятельная работа (час.)	93
Курс, Образовательная программа	2 курс, образовательная программа Экономика
Формат изучения дисциплины	Без использования онлайн курса

Syllabus

Research Seminar "Data Processing and Research Methodology"  
(4 ECTS)

### 1. Course Description

#### a) Pre-requisites

To study the course basic knowledge of economics and mathematical analysis, computer literacy, including the ability to work with basic office programs, are necessary.

#### b) Abstract

The objectives of the Research Seminar "Data Processing and Research Methodology" are the formation of the basics of analytical and research activities, the formation of professional competencies. To achieve this goal the following tasks are solved: the formation of basic practical skills in working with scientific literature, bibliography, reference books, databases, processing of research results, writing a scientific text, preparing an oral presentation; carrying out career-oriented work among students, allowing them to choose the direction and topic of research as part of the course work in the 3rd year of study and writing final qualifying work in the 4th year of study.

### 2. Learning Objectives

The research seminar develops the following competencies of the student:

- Ability to work with information.

- Ability to conduct research activities, including problem analysis, setting goals and objectives, identifying the object and subject of research, choosing methods of research, as well as assessing its quality.
- Ability to work in a team.
- Ability to use legal documents in professional activity.
- Ability to communicate freely, to express his thoughts orally and in writing, to lead the discussion in Russian and English.
- Ability to collect and analyze the raw data necessary for the calculation of economic and socio-economic indicators characterizing the activities of economic entities.
- Ability to calculate the economic and socio-economic indicators characterizing the activities of economic entities on the basis of standard methodologies and the current regulatory framework.
- Ability to choose tools for analyzing economic data in accordance with the task, analyze the results of calculations and substantiate the findings.
- Ability to prepare an informational review and / or analytical report using Russian and foreign sources of information.

### **3. Learning Outcomes**

As a result of studying the subject, the student:

- Has the skills of searching and analyzing qualitative and quantitative information, including using the library's electronic resources in Russian and English, databases, is able to analyze the material of printed and electronic media, experimental data in order to solve problems in the economic sphere.
- Applies the tools of theoretical and experimental research in economics, has the skills of theoretical analysis and experimental research. He can independently set the goals and objectives of the research, formulate hypotheses and conclusions.
- Takes responsibility for organizing work in a group of 2-5 people; able to listen to the opinion of the team and perform the tasks assigned to him.
- Able to compose oral texts (presentations), has the skills to competently conduct discussions, opposition.
- Owns the skills of critical analysis of theoretical and empirical works that sanctify various areas of modern economics. Able to participate in the discussion, ready to defend their point of view.
- Owns the skills of competent writing and design of scientific writing (essay, review, report, coursework) and oral texts (presentations) in Russian, the skills of competent discussion, opposition.
- Able to find and evaluate the quality and suitability of statistical data from various socio-economic indicators.
- Able to apply methods and formulas for calculating various coefficients and indicators of financial and economic activity.
- Owns the skills of competent writing and writing of scientific written (essay, review, report, term paper) texts in Russian and English. Based on the analysis of sources of literature on the research topic, he is able to compile a logical full review of the literature.

- Able to critically evaluate the presentations of fellow students presenting the results of work on course projects.

#### 4. Course Plan

№	Topic	Department	Hours, total	Seminars	Independent work
1	Research Methodology	Economic Theory and Econometrics	49	16	33
2	Money, credit, banks as an area of research	Banking	49	21	28
3	Statistical research methods	Economic Theory and Econometrics	54	22	32
	<b>Total</b>		<b>152</b>	<b>59</b>	<b>93</b>

Each department conducts its own monitoring activities, the list of monitoring activities is communicated to students by the teacher at the beginning of the block of each department.

#### Research Methodology

**Topic 1:** Introduction to research methodology. Research activities in NRU HSE.

Research activities in the bachelor program of NRU HSE. Different models of research methodology: European, American and Russian approaches. Opportunities of student's research works, requirements for student's scientific works. Overview of local and international conferences, forums and scientific grants for students. Program of student mobility in NRU HSE. Main stages of research. Structure of scientific study. Planning of research.

**Topic 2:** Program of research. Research subject, aims and objectives. General characteristics of research program. Correlation between the main elements of research program.

Choice of subject and consideration of research area. Initial analysis of research subject and explanation of study subject and field. Quality characteristics of subject: clarity, social and economics fields of study, originality, opportunity for research. Description of the scientific field in which research will be developed. Relevance of the subject. Key words. Formulation of research goal. The role of the research goal in the research process. Quality characteristics of research goal. Different research goal and research projects. Tasks of research.

**Topic 3:** Research problem: description of science and practical relevance of research. Science originality and practical significance. The object and the subject of research. Analysis of scientific literature. Basics of working with electronic resources of NRU HSE and others. Hypothesis formulation. The concept of research problem. Justification of research relevance by using critical literature analysis, statistic data, expert assessments, publications, etc. Justification of research goal. Characterization of research problem as a contradiction between different sites of scientific knowledge: between knowledge and facts; different elements of the theory; tasks and methods; methods and results. Scientific originality and practical implementation. Requirements for reliability. Searching of relevant literature and statistical data. Ways to read scientific literature. Outline. Main method to work with scientific literature: a full bibliographic description, extracting, general impression of author's view. Some ideas how to work with literature during research process: parallel maintenances of technical and conceptual documents, discreteness of information storage, clear fixation of instance and context. Bibliographic software: Mendeley, Zotero. Literature review as a part of research. The logical connection between theoretical and empirical studies in the literature review. Scientific hypothesis. Main

requirements to the hypothesis. Hypothesis in the methodological program of research. Data source for hypothesis formulation. The problem of the validity and verification of the hypothesis.

**Topic 4:** Methodology and methods in scientific research in economics. Structure and design of scientific text.

Methodology of scientific research. Universal research methods: metaphysical methods, the dialectical methods. General scientific methods: analysis and synthesis, generalization, abstraction, induction and deduction, analogy, modeling, historical, logical, classification methods. Particular research methods: mathematical modelling in economic studies. Statistic as the basis of empirical research. Prediction. Academic writing. Features of academic stylistics. Writing introduction and conclusion of the research text. The argument. Visualization of the contact with the reader. Bibliography as one of the means of self-identification and incorporation into the scientific community. The structure of the bibliographic list.

**Topic 5:** Coursework and thesis as an example of research project.

The formulation of research problem. Main aspects and stages of coursework. Structure of coursework. Deadlines. Technical and conceptual requirements of coursework.

### **Money, credit, banks as an area of research**

**Topic 1:** Financial system: functions, structure, financial market instruments, regulation.

Functions, structure of the financial system. Financial market instruments: money market and capital market. The internationalization of financial markets. . Regulation of the financial system. Causes of financial crises, their consequences, key tasks aimed at overcoming them

**Topic 2:** The concept of money and the monetary system. Non-cash turnover.

The need and prerequisites for the emergence and use of money. The essence and function of money. Theories of money. The evolution of forms and types of money as a trend to reduce transaction costs: commodity, full, defective, surrogate, electronic money. Cash and non-cash money. The monetary system is its main types.

The concept of cash flow. Non-cash turnover as an integral part of the total cash flow. Structure of cashless cash flow. Cashless payments. The principles of the organization of cashless payments. Forms of non-cash payments.

**Topic 3:** Creating money supply. Demand for money.

Monetary base and money supply. Monetary aggregates. Principles of construction. National features of the construction of monetary aggregates. Single and multiple expansion of the money supply: models of endogenous and exogenous money supply. Deposit and cash multipliers. Bank multiplier.

The demand for money and its measurement. Quantitative theory of money. Theory of preference liquidity. Portfolio theory of the demand for money.

Equilibrium in the money market: internal and external balancing mechanisms.

**Topic 4:** Money and inflation, methods of monetary stabilization.

Inflation, its types and methods of monetary stabilization. Factors determining inflation. Types and forms of modern inflation. Types of inflation. The consequences of inflation. Forms and methods of stabilizing monetary circulation. Anti-inflationary policy of the state.

**Topic 5:** Credit and banking systems. The activities of commercial banks. Credit and its role in a market economy.

The structure of the credit system. Banking sector credit system. Parabank sector of the credit system. The banking system of Russia: the formation and current status. The central bank as the main link in the country's banking system. Commercial bank: essence, functions, types. The role of banks in a market economy.

Operations and services of commercial banks. Types of banking operations: passive operations, active operations, intermediary and trust operations. Traditional and new services of commercial banks. Bank balance.

**Topic 6:** Central banks and monetary policy. The interaction of monetary and real sectors of the economy.

Forms of organization and functions of central banks. Goals and objectives of the functioning of central banks. Independence of central banks: degree and criteria of independence. The main operations of central banks. US Federal Reserve. European Central Bank.

Monetary policy of the central bank and its instruments. Types of monetary policy. The choice of monetary policy objectives: targeting inflation and interest rates. The impact of the financial crisis on the monetary policy of central banks. The impact of monetary policy on the real sector: the transmission channels of monetary policy.

### **Statistical research methods**

**Topic 1:** General questions of statistical research.

Statistical research and its stages. Requirements for statistical data.

Organization of statistics in Russia. Rosstat and territorial statistics bodies. International statistical organizations.

**Topic 2:** Absolute and relative statistical values. Average values

The essence and significance of statistical indicators.

Classification of statistical indicators. Absolute and relative indicators.

Different types of averages. Power average. The ratio between the forms of averages.

**Topic 3:** Variational series and indicators of variation.

Variation series and its elements. Discrete and interval variation series

Graphic representation of variational series. Structural averages: fashion and median. Quantiles. Indicators of variation and their interpretation.

**Topic 4:** Rows of dynamics.

The concept and types of series of dynamics.

Performance indicators. Average dynamics. Interpretation of dynamics indicators.

Identify trends in the ranks of the dynamics. Measurement of variability in the series of dynamics.

The simplest methods for predicting time series.

## **5. Reading List**

### **a) Required**

1. Darren Grant. Methods of Economic Research [Электронный ресурс] - Springer Nature Switzerland AG 2018. Online ISBN 978-3-030-01734-7. Режим доступа: <https://link.springer.com/content/pdf/10.1007%2F978-3-030-01734-7.pdf>
2. Steve Selvin. The Joy of Statistics: A Treasury of Elementary Statistical Tools and their Applications [Электронный ресурс]- Published to Oxford Scholarship Online: 2019. Режим доступа: <https://www.oxfordscholarship.com/view/10.1093/oso/9780198833444.001.0001/oso-9780198833444>
3. Hahn, L., Matt, C., & Hagemann, H. (2015-10-01). Economic Theory of Bank Credit. [Электронный ресурс]- Oxford University Press,. Retrieved 25 Jun. 2019, Режим доступа: <https://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780198723073.001.0001/acprof-9780198723073>.

### **b) Optional**

4. Dinesh S. Hegde. Essays on Research Methodology [Электронный ресурс]- Springer India 2015. Online ISBN 978-81-322-2214-9. Режим доступа: <https://link.springer.com/content/pdf/10.1007%2F978-81-322-2214-9.pdf>

## 6. Grading System

Research Seminar consists of several blocks of seminars, read by various teachers. Each teacher at the beginning of his block specifies the forms of current control used for grading. During training, students must complete a series of practical tasks (home and classroom, individual and group), prepare essays, reports. The current control is carried out in the form of checking tasks for independent work, tests, the forms of current control are also surveys at seminars, assessments of work in the audience, and presentations. Tasks for independent work are a set of practical tasks for the studied sections of the discipline.

The final grade for the discipline (grade for intermediate certification) is set based on the results of current control in 1 and 3 modules.

The marks of current control and intermediate certification are set on a on a ten-score scale.

Estimates for intermediate validation are rounded arithmetically.

Evaluation of the current control reflects the quality of preparation for classes, the performance of tasks formulated by the teacher in class, student attendance.

Evaluation of intermediate validation for module 1 is set on the basis of the project protection of a student's research work and his class work. The grade for the intermediate validation in module 3 is calculated as the arithmetic average of the current control ratings for modules 2 and 3.

The resultant mark for the course is calculated as follows:

$$M_{\text{resultant}} = 0.3 * \text{Intermediate validation of 1 module} + 0.7 * \text{Intermediate validation of 3 module}$$

## 7. Examination Type

Grades for intermediate certification are set based on grades for current control.

No blocking elements.

The seminar retake is carried out by preparing an essay on the topics of the sections of the corresponding year of study (agreed with the teacher who takes the retake). The volume of the essay is 7-10 pages. All works are checked in the Antiplagiat system and can be reckoned at the originality level above 80%. The essay is printed on one side of standard sheets of white A4 paper. Font Times New Roman. Size 14 pt. Line spacing 1,5. Alignment in width. The indent of the first line (paragraph) is 1.25 cm. Fields on the page: left margin - 35 mm; right margin - 10 mm; top margin - 20 mm; bottom field -20 mm. Pages of the essay are numbered. The first page is a title page on which the page number is not affixed. The essay must be submitted to the teacher who takes the retake, no less than 3 days before the retake.

## 8. Methods of Instruction

Research seminar is focused on the development of practical skills of students, because of this the course consists of practical and seminars. The study of seminar implies both classroom and out-of-class, independent work of students. As part of mastering the program of the course of the research seminar "Data Processing and Research Methodology", the independent work of bachelors should be organized in the following areas:

- 1) Study of seminar notes, critical analysis of articles offered for independent / individual study.
- 2) Regular homework, active use of electronic resources of the library and databases to develop the skills of searching and collecting the information necessary for practical research.
- 3) Active participation in the preparation of reports on the materials proposed for independent study of students.
- 4) Perform individual homework, preparing an essay.

## Special Equipment and Software Support

### Software

№	Name	Access conditions
1.	Windows Professional 8.1 Russian	<i>From the university's internal network (contract), 8.1.6.19-16/07, 25.05.2015 - ПО</i>
2.	MS Office Professional Plus 2013	<i>From the university's internal network (contract), 8.1.6.19-16/07, 25.05.2015 - ПО</i>

Professional databases, information reference systems, Internet resources (electronic educational resources)

№	Name	Access conditions
<b><i>Профессиональные базы данных, информационно-справочные системы</i></b>		
1.	Consultant Plus (Консультант Плюс)	<i>From the university's internal network (contract), 8.1.6.19-17/46, 23.03.2015</i>
2.	Electronic library system Urayt (Электронно-библиотечная система Юрайт)	URL: <a href="https://biblio-online.ru/">https://biblio-online.ru/</a>
<b><i>Интернет-ресурсы (электронные образовательные ресурсы)</i></b>		
1.	World Trade Organization (WTO) database	URL: <a href="http://www.wto.org">www.wto.org</a>
2.	World Bank Database	URL: <a href="http://www.worldbank.org">www.worldbank.org</a>
3.	EMISS database of the Federal State Statistics Service	URL: <a href="http://www.gks.ru">www.gks.ru</a>

For seminars, the computer/laptop, the projector, and the screen are required. For independent work, students need to have access to digital devices (laptops, tablets) with Internet access.