**Government of Russian Federation**

**National Research University – Higher School of Economics**

All-university Department of Public Policy

**Syllabus of the course**

**Quantitative and Qualitative Methods of Data Analysis**

for Master degree in Political Science (030200.68)

for Master degree program “Political Analysis and Public Policy”

Author of the syllabus:

Edgar Demetrio Tovar-García, PhD in economics, etovar@hse.ru

Irina Kosterina, PhD in sociology, ikosterina@hse.ru

Dmitry Zaytsev, PhD in political science, dzaytsev@hse.ru

Approved by the meeting of the all-university Department of Public Policy

on (day/month/year) «27» June 2014

Head of department:

Nina Belyaeva (signature)

Moscow, 2014

*This syllabus cannot be used by other university departments and other higher education institutions without the explicit permission of the department of Public Policy.*

# Scope of Use

The present program outlines minimum demands of students’ knowledge and skills and the content of the course.

The syllabus is intended for the department teaching this course, its teaching assistants, and students of the degree program 030201.68 ‘Political Science’, master’s program ‘Political Analysis and Public Policy’.

This syllabus meets the standards required by:

* Standards of National Research University Higher School of Economics of Federal Masters’ Degree Program 030200.68 “Political Science”,
* Master’s program ‘Political Analysis and Public Policy’ of Federal Master’s Degree Program 030200.68 “Political Science”,
* Curriculum of the master’s program ‘Political Analysis and Public Policy’ as of 2014.

# Learning Objectives

The main objective of the course “Qualitative and quantitative methods of data analysis” is to study statistics, regressions analysis, and qualitative methods to be used in solving problems that concern public policy.

The course aims:

* To form skills in statistics, particularly, in regressions analysis
* To study descriptive and inferential statistics
* To use statistics and regressions analysis to discuss problems of the society
* To create support for researches in public policy
* To form an understanding of specifics of qualitative and quantitative research
* To study methods of interview and observation and supportive methods
* To create practical skills of using qualitative data in public policy

# Learning outcomes

As a result of studying of discipline the student should

* **Know** key instruments of descriptive and inferential statistics, and main methods of regression analysis. Also, main types of qualitative methods, its genres, specifics and conditions of implementation.
* **Be able to** interpret descriptive statistics, use inferential statistics, and regression analysis to evaluate public policies, and predict and explain political processes. Also, the student will be able to collect and interpret qualitative data to analyze public policy phenomena and processes.
* **Acquire the skills for** usage of computer programs to develop statistical and econometric models. Also, the student will get skills for usage different methods analyzing qualitative data, including computer and online program

|  |  |  |  |
| --- | --- | --- | --- |
| Competence | **NC/NRU-HSE Code**  | Descriptors (indicators for achieving the result) | Forms and methods of education which help the students to acquire the competence  |
| Ability to analyze political, economic and sociological data using different qualitative and quantitative methods. | PC-8 | Students use descriptive statistics in the term paper.Students use regression analysis in the term paper.Students use qualitative methods in their term paper | Presentation of empirical research in the sphere of public policy.Review of literature.Discussion of the essay and homework. |
| Ability to analyze and improve familiar research methods and professional skills | SC-1 | Students use descriptive statistics in the term paper.Students use regression analysis in the term paper.Students use qualitative methods in their term paper | Presentation of empirical research in the sphere of public policy.Discussion of the essay. |
| Ability to report the work results and present them according to required standards | PC-5 | Students use descriptive statistics in the term paper.Students use regression analysis in the term paper.Students use qualitative methods in their term paper | Discussion of the essay and homework. |

# Role of the discipline within the structure of Master program

For specialization 030200.68 “Political Science”, master’s program “Political Analysis and Public Policy”, in the first year, this course is basic.

This course is not based on other disciplines.

The following knowledge and competences are needed to study the discipline:

* Basic statistics and algebra
* Knowledge of the computer program “Excel”

Main competences developed by studying this discipline can be used to study the following discipline:

* Research seminar

# Course Plan

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **№** | **Topic** | **Total hours** | **Contact hours** | **Independent students’ work** |  |
|  |  |  | **Lectures** | **Seminars**  |  |
|  | Data analysis | 4 | 2 | 2 | 2 |
|  | Probability and random variables | 8 | 6 | 2 | 5 |
|  | Estimation and hypothesis testing | 8 | 6 | 2 | 5 |
|  | Regression analysis and ordinary least squares | 8 | 6 | 2 | 8 |
|  | Multiple regression | 8 | 6 | 2 | 8 |
|  | Basic assumptions: Normality, multicollinearity, heteroscedasticity and autocorrelation | 4 | 2 | 2 | 4 |
|  | Design and Logic of Qualitative Research | 8 | 2 | 2 | 4 |
|  | Interview: types and techniques | 10 | 4 | 2 | 4 |
|  | Observation | 10 | 4 | 2 | 4 |
|  | Secondary and Specialized Methods and Data Analyzing/Interpreting | 8 | 2 | 2 | 4 |
| **Total:** | **108** | **40** | **20** | **48** |  |

# Requirements and Grading

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Type of grading | Type of work | 1st year | Characteristics |  |  |  |
|  |  | 1 | 2 | 3 | 4 |  |
| Current | Homework |  | 8 |  |  | Using of studying methods and applying to students’ thesis topic |
|  | Essay |  | 6 |  |  | Send it by email |
|  | Independent students’ work | 8 | 8 |  |  | One page report or exercise by chapter of textbook. Send it by email previously to the corresponding lesson. |
| Final | Examination |  | 9 |  |  | It is necessary personal computer and statistical programs |

## Course Evaluation Criteria

1) Examination

It consists of two tasks, one about quantitative methods, and the second one about qualitative methods.

2) Homework

For the homework (HW) the student must get familiar with relevant chapters from textbook (The handbook of qualitative research (2000)) and apply certain methods to their term paper’s topic.

3) Independent students’ work (IW)

For independent work (IW1 for module 1 and IW2 for module 2), the student must write a report (or exercise) about the content of main chapters of the textbooks (Rumsay, 2003; 2009; Fair, 2002; Stock and Watson, 2007).

4) Essay

The student has to write an Essay (ES), as a research report: Identify dependent and independent variable(s) related with his/her term paper or master thesis. That is, identify a theory, and look for data to test the theory (hypothesis). In the essay (report), the student must present descriptive statistics of his/her data set, run a regression analysis, and interpret results.

# Course Description

**7.1 Part 1: Quantitative Methods of Data Analysis (40 hours)**

**Topic 1. Data analysis.**

Sources and data types: cross-sectional, time and panel data. Descriptive statistics: measures of central tendency and measures of spread. Introduction to computer programs. (Rumsay, 2003: chapter 5; Stock and Watson, 2007: chapter 1). 4 hours.

**Topic 2. Probability and random variables.**

Discrete random variables. Continuous random variables. Probability distributions: The Normal, Chi-Squared, Student t, and F Distributions. Sampling. (Rumsay, 2003: chapters 6,8 and 9; Stock and Watson, 2007: chapter 2). 8 hours.

**Topic 3. Estimation and hypothesis testing.**

Estimation of the population mean. Hypothesis tests and confidence intervals. Comparing means from different populations. Using the t-statistic when the sample size is small. (Rumsay, 2003: chapters 11-15; Stock and Watson, 2007: chapter 3). 8 hours.

**Topic 4. Regression analysis and ordinary least squares.**

Introduction to econometrics. Correlation, regression and causation. Simple regression and ordinary least squares, main assumptions, coefficient of determination r-squared, regression coefficients and tests of significance. (Rumsay, 2003: chapter 18; Rumsay, 2009: chapter 4; Stock and Watson, 2007: chapters 4-5; Fair, 2002: chapters 1-2). 8 hours.

**Topic 5. Multiple regression.**

Partial regression coefficients, tests of significance, the adjusted r-squared. Dummy explanatory variables. (Rumsay, 2009: chapter 5; Stock and Watson, 2007: chapters 6-7; Fair, 2002: chapters 3-4. 8 hours.

**Topic 6. Basic assumptions: Normality, multicollinearity, heteroscedasticity and autocorrelation.**

What happens if the assumptions are violated? Detection and solutions. (Gujarati, 2004: chapters 4, 10-12). 4 hours.

**7.2 Part 2: Qualitative Methods of Data Analysis (20 hours)**

**Topic 7.** **Design and Logic of Qualitative Research**

Designing and specifics of qualitative research: when and why? Kinds and genres of qualitative research. Strengths and weakness of Qualitative Research

***Required readings:***

1. Empirical Political Research: quantitative and qualitative research methods / J. Manheim et all. 2011. Part V.
2. The handbook of qualitative research (2000). Los Angeles [etc.]: SAGE Publicationsс. Chapters: Compositional Studies in Two Parts: Critical Theorizing and Analysis on Social (In)Justice Michelle Fine and Lois Weis, Ethics and Politics in Qualitative Research Clifford G. Christians,
3. Mason, J. Qualitative researching (2001). Los Angeles [etc.]: SAGE Publications. Chapter Designing qualitative research
4. Marshall, C. (2001) Designing qualitative research. Los Angeles [etc.]: SAGE Publications. Chapters 2, 3, 4.

***Optional readings:***

Johnson, J. B. (2012) Political science research methods. Los Angeles [etc.]: SAGE Publications.

**Topic 8**. **Interview: types and techniques.**

Types of interview. Interviews with experts. Organization and holding of the expert survey: steps, methods and conditions of selection of experts, problems of access tools. Focus Groups. In-depth interviews. Drafting of the questionnaire. Specificity of semi-formalized interview. Semi-structured Format. Open-ended Questions. Understanding and Interpretation. How to negotiate about the interview? Practice interviewing Skills and Attributes of the Interviewer

***Required readings:***

1. Empirical Political Research: quantitative and qualitative research methods / J. Manheim et all. 2011. Part V.
2. Fontana, A., Frey, J. H. (2005). The interview: From neutral stance to political involvement. In N.K. Denzin & Y.S. Lincoln (Eds.), The Sage handbook of qualitative research (3rd ed., pp. 279-301). Thousand Oaks, CA: Sage.
3. Boyce, C. & Neale, P. (2006). Conducting In-depth interviews: A Guide for Designing and Conducting In-depth Interviews for Evaluation Input. Online. <http://www.pathfind.org/site/DocServer/m_e_tool_series_indepth_interviews.pdf?docID=6301>

***Optional readings:***

1. Friesen, B. (2010). Designing and Conducting Your First Interview Project. San Francisco: Jossey-Bass.
2. Dexter L.A. (1970). Elite and Specialized Interviewing. Evangton: Northwestern University press
3. Foddy W. (1993). Constructing questions for interviews and questionnaires. Theory and practice in social research. Cambridge. Cambridge University Press.

**Topic 9.** **Observation**

Kinds of observation. Observing and participating. Why Use Observation to Collect Data? Advantages and Disadvantages of Using Participant Observation. How Does One Know What to Observe? How Does One Conduct an Observation? Ethics. Keeping and Analyzing Field Notes and Writing up the Findings

***Required readings:***

1. Empirical Political Research: quantitative and qualitative research methods / J. Manheim et all. 2011. Part V.
2. The handbook of qualitative research (2000). Los Angeles [etc.] SAGE Publications. **Part III.** Chapter 18, 21 (Tedlock B. The Observation of Participation and the Emergence of Public Ethnography and Madison D.S. Critical Ethnography as Street Performance: Reflections of Home, Race, Murder and Justice)
3. Mason, J. (2001). Qualitative researching. Los Angeles [etc.] SAGE Publications. Part II, Chapter 5. Observing and participating
4. Barbara B. Kawulich. Participant Observation as a Data Collection Method <http://www.qualitative-research.net/index.php/fqs/article/view/466/996>

***Optional Readings:***

1. DeWalt, Kathleen M. & DeWalt, Billie R. (2002). Participant observation: a guide for fieldworkers. Walnut Creek, CA: AltaMira Press.
2. Danny L. (1989) Jorgensen Participant Observation: A Methodology for Human Studies (Applied Social Research Methods). SAGE Publications

**Topic 10. Secondary and Specialized Methods and Data Analyzing/Interpreting**

Life Histories and Narrative Inquiry. Historical Analysis. Films, Videos, and Photography. Internet Research. Interaction Analysis. Combining Data Collection Methods. Analyzing qualitative data.

***Required readings:***

1. Empirical Political Research: quantitative and qualitative research methods / J. Manheim et all. 2011. Part V.
2. Marshall, C. (2011). Designing qualitative research. Los Angeles [etc.] SAGE Publications. Chapters ‘Secondary and Specialized Methods’ and ‘Managing, Analyzing, and Interpreting Data’
3. The handbook of qualitative research (2000). Los Angeles [etc.] SAGE Publications. **Part IV** Chapters: What’s New Visually? Douglas Harper, The Methods, Politics, and Ethics of Representation in Online Ethnography. Annette N. Markham, Anayzing Talk and Text. Anssi Perakyla, **Part V. Ch.** The Practices and Politics of Interpretation. Norman K. Denzin

***Optional Readings:***

1. Mason, J. (2001). Qualitative researching. Los Angeles [etc.] SAGE Publications, Ch 6 Using visual methods and documents. Part III Analyzing qualitative data

# Teaching Methods and Recommendations

Lectures are combined with the discussion of reading for the week. Students are also required to make reports and oral presentations of their independent works.

## Recommendations for course teacher

It is recommended to use interactive teaching methods, which allow for most student participation such as discussions, case studies, role-plays. It is also expected that Power Point presentations will be used for teaching.

The course is intended to be based on real-life case studies, multimedia examples, and current events. It is necessary to develop examples in the computer programs.

## Recommendations for Students

The course format mixes lectures, group discussion, and presentations. Students should take notes, both on lectures and on the reading, and presentations, with the intention of addressing the key themes of the course. The student must read the textbooks and use the computer programs.

## Provisional Topics for Current Control

Continuously, teachers will evaluate independent students’s work, readings and homework.

For example:

Write a summary of the chapter 1 of the textbook

Resolve the exercise 1 of the chapter 1 of the textbook

Identify methodology (main econometric model) in the reading 1

Identify recommendations for policymakers in the reading 1

## Provisional Questions for Final Control

In a regression model (using least squares):

What means that the r-square equals 0.10?

What means that the coefficient B1 is negative and significant at the 1% level?

Between the independent variables X1 and X2 the correlation coefficient equals 0.7, how this affect the method of least squares?

Which are the implications for the method of least squares if the Durbin-Watson statistic equals 2?

Elaborate the research design (using qualitative methods) for one of suggested topics:

1. Brief methodology and detailed examples of sections/question
2. List of experts/respondents (sampling, selection’s criteria, recruiting)
3. Argue the choice of suggested methods. Additional/complementary methods
4. Main principle and stages of data analysis

# The rule of forming cumulative grade

Oaccumulative = 0,2 \* Oindependent work 1 + 0,2 \* Oindependent work 2 + 0,4 \* Ohomework + 0,2 \* Oessay

Ofinal = 0,6 \* Oaccumulative  + 0,4 \* O examination

# Reading and Materials

## Textbooks and Readers

Empirical Political Research: quantitative and qualitative research methods / J. Manheim et all. 2011. Part IV, V.

Fair, R.C. (2002) Predicting Presidential Elections and Other Things. Stanford University Press. Available at: <http://fairmodel.econ.yale.edu/rayfair/pdf/vote.pdf>

Gujarati, D. (2004). Basic econometrics. McGraw-Hill, Fourth edition.

Rumsey, D. (2003). Statistics for dummies. Wiley Publishing, Inc., Indianapolis, Indiana.

Rumsey, D. (2009). Statistics II For Dummies. Wiley Publishing, Inc., Indianapolis, Indiana.

Stock, J. and Watson, M.W. (2007). Introduction to econometrics. Addison Wesley, second edition.

The handbook of qualitative research (2000). Los Angeles [etc.]: SAGE Publications.

Denzin N.K. & Lincoln Y.S. (Eds.), The Sage handbook of qualitative research (3rd ed., pp. 279-301). Thousand Oaks, CA: Sage.

## Required Reading

Danny L. (1989) Jorgensen Participant Observation: A Methodology for Human Studies (Applied Social Research Methods). SAGE Publications

Dexter L.A. (1970). Elite and Specialized Interviewing. Evangton: Northwestern University press

DeWalt, Kathleen M. & DeWalt, Billie R. (2002). Participant observation: a guide for fieldworkers. Walnut Creek, CA: AltaMira Press.

Friesen, B. (2010). Designing and Conducting Your First Interview Project. San Francisco: Jossey-Bass.

Foddy W. (1993). Constructing questions for interviews and questionnaires. Theory and practice in social research. Cambridge. Cambridge University Press.

Fontana, A., Frey, J. H. (2005). The interview: From neutral stance to political involvement. In

Boyce, C. & Neale, P. (2006). Conducting In-depth interviews: A Guide for Designing and Conducting In-depth Interviews for Evaluation Input. Online.

<http://www.pathfind.org/site/DocServer/m_e_tool_series_indepth_interviews.pdf?docID=6301>

Johnson, J. B. (2012) Political science research methods. Los Angeles [etc.]: SAGE Publications.

Kawulich, Barbara B. Participant Observation as a Data Collection Method <http://www.qualitative-research.net/index.php/fqs/article/view/466/996>

Mason, J. Qualitative researching (2001). Los Angeles [etc.]: SAGE Publications.

Marshall, C. (2001) Designing qualitative research. Los Angeles [etc.]: SAGE Publications.

## Optional Reading

Newbold, P. (2007). Statistics for business and economics. Prentice Hall.

Morton, Rebecca B. Methods and Models (1999). A Guide to the Empirical Analysis of Formal Models in Political Science. Cambridge University Press

Greasley, Pete Quantitative Data Analysis Using SPSS (2008). An Introduction for Health and Social Sciences Open University Press

## Software

Microsoft Excel

SPSS –Statistical Package for the Social Sciences

NVivo

## E-learning Support

# Equipment

Teachers need projector and students need a personal computer and a voice recorder.