National Research University Higher School of Economics

Course Syllabus for

Research Seminar

(3 ECTS)

Approved by
Academic Council
of the Master's Programme
Minutes AC2

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No. of credits	3
Contact hours	32
Independent study (hours)	82
Year of study, degree programme	Master's programme "Governance of Science, Technology and Innovation" 1st year, 3 module, compulsory
Study format	No use of on-line courses

Abstract

The course is delivered to the first year master students of the Master Program 'Governance of Science, Technology and Innovation' at the National Research University Higher School of Economics (HSE). The course length is 228 academic hours in total of which 32 are classroom hours and 196 hours are devoted to self-study. It continues logically the course 'Scientific research Methods for STI' and is designed to help students to foster their work on research projects and develop term papers.

The course is divided into two blocks. The first includes seminars discussing research data analysis and academic communication. The second block is a series of seminars fully dedicated to individual work-in-progress presentations.

The academic control is based on one essay (peer review), an exam (organized in a form of work-in-progress presentation) and in-class engagement.

1. Objectives, Results and Pre-requisites

Learning Objectives:

- to provide students with practical knowledge and skills necessary for the analysis of quantitative and qualitative data;
- to introduce students to the key sources of empirical data in the STI field;
- to consider how to organize and present research results;
- to train students' analytical and critical thinking skills.

Expected Learning Outcomes (ELO):

As a result of the course students will be able:

- to analyze different types of data correctly;
- to interpret the findings of research and to write comprehensive conclusions for research papers;
- to create proper academic presentation and to communicate research results correctly.

Pre-requisites:

- basics of scientific research design and methodology;
- analytical skills and critical thinking;
- approved topic for term paper;
- successful completion of the course "Research Methods for STI".

2. Course Contents

Chapter	Topic	Total hours	Seminars	Self-study	ELO to be assessed	Assessment formats
Introduction	Introduction to the course	2	2	0	-	-
1. Data analysis and interpretation	1.1 Sources of empirical information in STI studies: an overview	2	2	0	- capabilities to analyze different types of data correctly; - capabilities to interpret the findings of research and to write comprehensive conclusions for academic papers	- In-class performance; - Peer-review
	1.2 Quantitative data	12	4	8		
	1.2 Qualitative data	12	4	8		
	1.3 Presentation of research results	4	4	0	- to create proper academic presentation and to communicate research results correctly	- Work-in-progress presentation
2. Work-in-progress presentations	*Consultations on individual research projects are provided on request*	82	16	66		

TOTAL	**114**	**32**	**82**		

Topic 1. Introduction to the course

Basic guidelines and requirements of the course. Schedule and deadlines. Academic control. Criteria for written papers evaluation.

No readings are required.

Topic 2. Sources of empirical information in STI studies: an overview

Statistics of STI: information sources. How to read and use analytical reports.

Workshop: working with OECD database (Main Science and Technology Indicators).

Optional readings:

- OECD (2018) Science, Technology and Innovation Outlook. Paris: OECD.

Topic 3. Quantitative data: analysis and interpretation

Basics of quantitative analysis. Descriptive statistics. Overview of cluster, factor and regression analysis.

Workshop: Overview of quantitative analysis software: the example of SPSS.

Required readings:

- Burghard U., Dütschke E. (2018) Who wants shared mobility? Lessons from early adopters and mainstream drivers on electric carsharing in Germany // Transportation Research, Part D: Transport and Environment. DOI: https://doi.org/10.1016/j.trd.2018.11.011.

Optional readings:

- Wetcher-Hendricks D. (2014) Analyzing Quantitative Data: An Introduction for Social Researchers. John Wiley & Sons, Inc.
- L. S. Meyers, G. C. Gamst, A. J. Guarino (2013) Performing Data Analysis Using IBM SPSS. John Wiley & Sons, Inc.

Topic 4. Qualitative data: analysis and interpretation

Basics of qualitative analysis. Coding of transcripts. Analysis and presentation.

Workshop: Overview of quantitative analysis software: the example of NVivo.

Required readings:

- Dowling R., Maalsen S., Kent J. L. (2018) Sharing as sociomaterial practice: Car sharing and the material reconstitution of automobility // Geoforum, 88, 10-16.

Optional readings:

- Bryman A., Burgess B. (2002) Analyzing Qualitative Data. Routledge.

Topic 5. Presentation of research results

Basics of presenting research ideas: How to structure your presentation? How to present data? How to develop one's presentation skills? New tools for presentations.

Optional readings:

- Duarte N. (2008) Slide: ology: The art and science of creating great presentations (Vol. 1). Sebastopol, CA: O'Reilly Media.

3. Assessments

Final grade = 20% In-class + 30% Peer-review + 50% Colloquium

Final grade is given following ten-point system:

10	- brilliant	5	- quite satisfactory
9	- excellent	4	- satisfactory
8	- nearly excellent	3	- bad
7	- very good	2	- very bad
6	- good	1	- unsatisfactory

After summing up the points for all the control forms, final grade will be rounded up (calculated for student). Blocking elements are not present.

a) In-class performance

For this criterion, engagement in group discussions, completion of in-class tasks (within the workshops) and attendance of work-in-progress presentations are considered.

b) Peer-review

Students are required to write individual peer-reviews for master theses submitted earlier by former Master Program graduates. Four master theses are distributed for this purpose at the first seminar of the course. The task is designed to demonstrate the best practices used in students research and – on the contrary – the most typical mistakes made. It will also help students to understand clearly the criteria for TP and MT evaluation and to develop their research projects and research plans accordingly.

Peer-review should follow the given structure:

1. Relationship to Topic and Literature.

- Short description and assessment of MT chapters
- Relevance of work to the chosen topic
- Demonstration of an adequate understanding of the relevant literature in the field and citation of an appropriate range of sources
- Relevance of research question to topic

2. Methodology and results

- Development of clear research questions and / or hypotheses
- Choice and application of well-reasoned research methods
- Correct use and employment of methods
- Development, presentation and justification of adequate conclusions from research
- Preparation of answers to the research questions raised in the paper

3. Quality of Communication

- Check if the MT uses the template provided
- Take into account that the thesis is 60 pages text not counting outline, bibliography, annex(es), list of tables and similar plus/minus 10 per cent
- Clear presentation and analysis of research results
- Look for correct numbering, logic of headings & sub headings (e.g. one sub-heading under a heading is not acceptable, at least 2 sub-headings need to be under a heading)
- Look at the use of references, e.g. check if all references cited in document are included in bibliography and vice versa
- Check if tables and figures are numbered and titles assigned, check if sources are provided for tables and figures
- Communication of ideas
- Provide an overall assessment of consistency and coherence of the MT argumentation
- Check if conclusions and summary relate to the main body of the MT
- Check if summary outlines the main body of the MT.

Peer-review should be 2 – 3 pp. long. Deadline for submission (via e-mail, to the lecturer and course director) is announced at the first seminar. For evaluation, peer-review structure, argumentation and demonstration of knowledge gained at the course are considered.

If a student fails to submit a peer-review on time due to objective reasons and in case (s)he provides relevant official documents, peer-review is a subject of retake and should be submitted before the exam session (following HSE university's Regulations for Interim and ongoing Evaluations of Students).

c) Colloquium

Colloquium is organized in a form of work-in-progress presentations followed by a Q&A session. Each student has to deliver a 15 – 20 minutes presentation on work-in-progress for his/her term paper research project. It should include:

- a short introduction of research project (incl. the key elements of methodology);
- term paper (TP) detailed structure;
- research steps already taken (e.g. literature search and review, key concepts definition, cases selection for case study, etc.);
- results to-date / preliminary conclusions (observations);
- further research plan.

Work-in-progress is graded by a commission of at least two faculty members including supervisor and a second independent faculty member. The evaluation criteria include:

- research design and structure: the relevance and transparency of research topic, aim and goals, research methods; development of well-grounded and coherent TP structure, its relevance to TP title and research questions / aims and goals;
- work-to-date: progress of TP completion; scope of literature review and relevance of selected publications; feasibility of further research plan;
- preliminary results: accuracy of achieved (preliminary) conclusions / observations; relevance of preliminary results to research topic and research question; quality of argumentation.

- Q&As: ability to give clear and exact answers about research methodology and work-in-progress; quality of argumentation.

If a student fails a work-in-progress presentation due to objective reasons and in case (s)he provides relevant official documents, it is a subject of retake and should be delivered by the end of the exam session (following HSE university's Regulations for Interim and ongoing Evaluations of Students).

4. Resources

The list of required and optional publications are to be found in Course Contents as distributed between the topics covered by the course. Students are recommended to use HSE e-Library to access the publications. Also all the materials can be uploaded from LMS.

No specialized software or equipment are required.

5. Organization of Studies for Persons with Limited Mobility and Disabilities

If necessary, learners with limited mobility or a disability (as per his/her application), as well as per his/her individual rehabilitation programme, may be offered the following options for receiving learning information with due consideration of his/her individual psycho-physical needs (e.g., via eLearning studies or distance technologies):

- for persons with impaired vision: enhanced fonts in hard copy documents; e-documents; audio files (transfer of study materials to an audio-format); hard copy documents with the use of Braille; individual consultation with a facilitated communicator; individual assignments and mentoring;
- for persons with hearing impairments: in hard copy; e-documents; video materials with subtitles; individual consultation with a facilitated communicator; individual assignments and mentoring;
- for persons with a muscular-skeleton disorder: in hard copy; e-documents; audio-files, individual assignments and mentoring.