1. Course Description

The course is delivered to master students of The National Research University Higher School of Economics. It is delivered in two modules. The course length is 342 academic hours in total of which 64 hours are class room hours for lectures and seminars and 278 hours are devoted to self study.

a. Pre-requisites

- Basics of scientific research design and methodology;
- Analytical abilities and critical thinking;
- Preliminary ideas on MTRP.

b. Abstract

The course is divided into four blocks. The first includes a series of seminars discussing the key steps of research project development and planning: research topic identification and problematization, research questions and hypotheses formulation, writing a comprehensive literature review, etc. The second block is fully dedicated to the research methods mainly used by the Master Program students for their research projects: survey, interview, case study, secondary statistical data analysis. The third part of the course has no classroom activities, except individual consultations provided on request. This time is fully given to students writing MTRPs under supervision. Finally, the fourth block is a series of MTRPs oral defenses (in groups).
The academic control is based on one written peer-review, MTRP, and written exam.

2. Learning Objectives
   - To provide students with practical knowledge and abilities necessary for successful MTRP development and defense and further realization of research projects;
   - To broaden students’ knowledge on social studies research methods;
   - To train students’ analytical and critical thinking abilities.

3. Learning Outcomes
   As a result of the course students will be able:
   - To identify current trends and relevant research problems in the field of STI management, to summarize and assess previous research results;
   - To develop research design and to plan its realization;
   - To collect and analyze empirical data according to research objectives and questions;
   - To use the key quantitative and qualitative research methods properly;
   - To formulate and test research hypotheses, to present and substantiate research results;
   - To write and present reviews, research proposals, and academic papers.

4. Course Plan

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<th>Topic</th>
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<td>Introduction to the course</td>
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<td>Master thesis guidelines and regulations</td>
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<td>Current global agenda on STI: analysis of the field</td>
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<td>Designing research portfolio in research institutes: evidences from HSE ISSEK</td>
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<tr>
<td>1. Research project design and realization</td>
<td>1.1 Identification of a research problem: techniques and approaches</td>
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<td>1.2 The key elements of research: questions / hypotheses / goals</td>
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<td>1.3 Writing academic text: structure, key elements and features</td>
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<td>2. Research methods</td>
<td>2.1 Research methodologies and logics of method selection</td>
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<td>2.6 Documents analysis</td>
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<td>2.7 Interpretation of quantitative and qualitative research results</td>
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<td>4. Master thesis research proposal: oral defense</td>
<td>Writing MTRP</td>
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<td>4.1 Development of MTRP presentation</td>
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<td>4.2 Research proposal oral defense</td>
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**Program content**

1. **Introduction to the course**

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

Students are welcomed to share their aspirations and research interests and questions, which are needed to be discussed at the course.

*No readings are required.*

2. **Master thesis guidelines and regulations**


*Optional readings:*


3. **Current agenda in STI studies: the analysis of the field**

Key research areas and emerging topics. Current challenges.

*Required readings:*


*Optional readings:*
4. **Designing research portfolio in research institutes: evidences from HSE ISSEK**

Presentation of HSE ISSEK key research areas and achievements.

*No readings are required.*

5. **Identification of a research problem: techniques and approaches**


*Required readings:*

*Optional readings:*

6. **The key elements of research: questions / hypotheses / goals**

The key requirements to these elements of research. Types and features.

*Optional readings:*

7. **Research methodologies and logics of method selection**

Characteristics of qualitative, quantitative and mixed research. Factors influencing the process of methodology selection: research objectives, focus, nature of study, type of data and data analysis.

*Optional readings:*
8. Survey research


Required readings:

Optional readings:

9. Interview


Required reading:

Optional readings:

10. Sample


Optional readings:
- How many qualitative interviews is enough? Expert voices and early career reflections on sampling and cases in qualitative research // Baker S.E., Edwards R. (eds.). URL:
11. Case study


Required readings:

Optional readings:

12. Document analysis

Document analysis as a method of qualitative research, its advantages and limitations. Rationale and major steps.

Required readings:

Optional readings:

13. Official statistics

Statistics of STI: information sources. Interpretation of data. Results presentation and discussion.

Students’ group presentations on:
1) R&D funding in Russia: scope and sources;
2) R&D personnel: population and structure;
3) R&D outputs of Russian science: publications and patents;
Presentations’ topics are distributed one week before the RS. To prepare, students are free to use any of the recommended publications and datasets as well as other information available. Presentation should include: - description of data source; - list of main indicators being used; - evidences of statistical analysis; - conclusions.

Optional readings:

14. Interpretation of quantitative and qualitative research results
Preparation and primary description of qualitative data. Coding, categorization. Qualitative data analysis software. Presentation of qualitative research results. Typical mistakes of qualitative analysis.

Required readings:

OR:

Optional readings:

5. Reading List
a. Required

b. Optional
- How to Do Your Case Study – A Guide for Students and Researchers. London: SAGE.

6. Grading System

Final grade = 30% Peer-review + 20% MTRP + 20% Colloquium + 30% Written exam

Summary Table: Correspondence of ten-point to five-point system’s marks

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<tr>
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<tbody>
<tr>
<td>1 – unsatisfactory</td>
<td>Unsatisfactory – 2</td>
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<tr>
<td>2 – very bad</td>
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<td>3 – bad</td>
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<tr>
<td>4 – satisfactory</td>
<td>Satisfactory – 3</td>
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<tr>
<td>5 – quite satisfactory</td>
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<tr>
<td>6 – good</td>
<td>Good – 4</td>
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<tr>
<td>7 – very good</td>
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<tr>
<td>8 – nearly excellent</td>
<td>Excellent – 5</td>
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<td>9 – excellent</td>
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<td>10 – brilliant</td>
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After summing up the points for all the control forms, final grade will be rounded up (calculated for student).

7. Course Assignments

a) Peer-review¹

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 master research and – on the contrary – the most typical mistakes made. It will also help students to understand clearly the criteria for master thesis evaluation and to develop their MPRPs 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 1.5 – 2.5 pp. long. Deadline for submission (via e-mail, to the course director) is announced at the first seminar.
For evaluation, peer-review structure, argumentation and demonstration of knowledge gained at the course are considered.

b) **Master thesis research proposal (MTRP)**

MTRP is a brief introduction of a research project designed for a master thesis. It should include the following elements:

- Title;
- Introduction, including (preliminary) literature review and problem statement;
- Research questions and/or hypotheses;
- Aims and goals;
- Methodology (methods and techniques to be used, incl. explanation of the choice);
- Scientific and/or practical novelty/relevance of research;
- Time plan.

For a perfect evaluation, MTRP should meet the following criteria:

- Research topic is relevant for the field of STI management and appropriate for a master thesis research project;
- Research problem / motivation is clearly stated and reasoned;
- Research question(s) / aim(s) is reasonable, clearly formulated and can be answered / achieved as a result of a study;
- Preliminary literature review provides a sufficient background for the further study; a sufficient number of papers is critically analyzed;
- The methods chosen are appropriate and well-reasoned;
- The novelty of a project is explained;
- Research plan is feasible;
- The quality of argumentation is appropriate;
- The structure of MTRP follows the recommended template and includes all the required elements;
- The quality of communication (language, text coherence) is appropriate.

MTRP is evaluated by the course director and supervisor, the final grade is calculated as the average of the two. MTRP is not limited in volume, the minimum is 3 pp. Deadline for submission *(via e-mail, to the course director and supervisor)* is announced at the first seminar.

c) **Colloquium**

Colloquium is an oral defense of MTRP. It is graded by a commission of at least two faculty members according to the following criteria:

- Content: relevance and reasonability of MTRP elements (research problem, question and/or aims and goals, methods to be used, novelty and/or relevance of research);
- Quality of communication: communication of ideas, transparency of argumentation;
- Q&A’s: capability to answer the questions.

Attendance of MTRPs defenses are obligatory for all students.

8. Examination Type – written examination
The written examination is designed to control students’ knowledge gained at the course and includes two questions from the list of those discussed during the seminars and covered in the compulsory readings. The list of questions for the exam is provided at the last seminar of the Module 1. To prepare, students are recommended to consult with the teacher’s presentations, required and optional readings, any other useful resources.

An answer to each question is evaluated on 10-point scale. The final grade is calculated as the average.

Students can be released from the examination by the course director as an encouraging for their engagement in class. The list of these students is announced at the last seminar of the Module 1.

9. Methods of Instruction
The research seminars are organized predominantly in the form of the moderated group discussions based on the academic publications preliminary read and analyzed. Some topics (survey research, sample, case study) are accompanied with the introductory teacher’s presentations to help better understanding. In the course plan, there are two group tasks which are to be prepared at home and then presented and discussed in the classroom.

10. HSE Library E-resources
Students are encouraged to use HSE Library E-resources to search for and download the publications for the course, and to get additional materials to prepare for the written exam.

11. Software Support, including Open-Source Database Software
- Microsoft Windows 7 Professional RUS: internal university network (agreement)
- Microsoft Windows 10: internal university network (agreement)
- Microsoft Windows 8.1 Professional RUS: internal university network (agreement)
- Microsoft Office Professional Plus 2010: internal university network (agreement)

12. Special Equipment
Classrooms for lectures provide proper use and presentations of particular topics, specifically:
- PC with internet access and office software or laptop
- multimedia projector
- screen
- flipchart