The "quantitative psychology and economics" programme of study within the Interdisciplinary Doctoral School

Classes will be taught only in English.

The duration of the programme is eight semesters.

I. General university classes for all PhD students

No.	Name	Number of compulsory hours	Number of voluntary hours	Semester	PRK
1.	Higher education didactics	30		1	UK_1, UK_2, UK_3, UU_1, UU_2
2.	Ethics	8		1	WG_2, KO_1, KO_2, KR_1
3.	Copyright	4	4	1	WK_4, WG_2, KO_2, KR_1
4.	Acquisition of grants (scholar's workshop)	8	4	2 and 3	WK_3, WK_4, UW_2, UK_4, UO_1, UU_1, KK_2
5.	Public speaking (scholar's workshop)		8	3	UK_1, UK_5
6.	Knowledge transfer (scholar's workshop)	4		5	WG_2, WG_3, UW_3, UK_2, KK_3, KO_1, KO_2, KO_3

Description of the subjects:

1. **Higher Education Didactics (30 hours, 1st semester)**
   Classes aimed at expanding the knowledge and skills of PhD students in the area of planning pedagogical work, analysing and assessing the course of educational processes, as well as determining and assessing their effects. The discussion will encompass issues concerning the correctness and conditions of the teaching-learning process.

2. **Ethics (8 hours, 1st semester)**
   The lecture presents the main issues related to academic ethics, with account being taken for its role in contemporary moral thinking. The content of the lecture will encompass the analysis of basic concepts and methods used in this area, as well as the presentation of the great normative theories. The classes will feature discussions of concrete examples of applying ethical principles in practice.

3. **Copyright (4 hours plus 4 voluntary hours, 1st semester)**
   Providing the PhD students with the fundamental knowledge on copyright and neighbouring rights with reference to research and didactic activities. As a result, the PhD student will acquire knowledge on plagiarism and the rules of properly using other people's achievements.

4. Acquisition of grants (scholar's workshop) – 8 hours plus 4 voluntary hours, 3rd semester

The aim of the classes is to provide the PhD students with knowledge on the principles of constructing research projects financed from external sources. The PhD students will acquire the skill of effectively drafting grant applications, which will increase the percentage of positively examined applications. Six hours of the classes will be dedicated to the principles of applying for grants and two hours to how they should be settled.

5. Public speaking (scholar's workshop) – 8 voluntary hours, 3rd semester

The classes aim at increasing the skills of PhD students in the area of public speaking by teaching them the principles and good practices that should accompany the preparation and delivery of speeches. The PhD student will become familiar with the theory and practice of effective public speaking.

6. Knowledge transfer (scholar's workshop) – 4 hours, 5th semester

Classes that develop the knowledge sharing skills. Their aim is to become familiar with the possibilities of knowledge transfer from a higher education institution to enterprises, public institutions and non-governmental organisations. The "know-how" is unique and specific for a given organisation (e.g. a higher education institution). The "know what", on the other hand, includes definitions of concepts, descriptions and professional terminology. The transferring methods may differ depending on the nature of the knowledge to be transferred and its recipients.

II. Classes organised for the PhD students of the QPE programme

No.	Name	Number of compulsory hours	Number of voluntary hours	Semester	PRK
1.	Methodical workshop on didactics (group)	4	4	2	UK_2, UK_3,UU_2
2.	Methodical workshop on didactics (individual as part of internship)	4		2	UK_2, UK_3,UU_2
3.	Academic writing (scholar's workshop)	30		2	WK_3, WK_4, WG_3, UW_1, UW_2, UK_2, UO_1, UU_1, KK_2
4.	Scientific development – individual classes with the supervisor (scholar's workshop)	15		2, 3	WG_1, WG_2, WG_3, UW_1, UW_2, UO_1, KK_1, KK_2
5.	Methodological and methodical classes to be selected from the list	120		2, 3, 4, 5	WK_3, UW_1
6.	Doctoral School seminar	32		2, 3	WK_1, WK_2, WG_1, UK_1,

					UK_4, UK_5, KK_1
7.	QPE programme seminar	16		3	WK_1, WK_2, WG_1, UW_2, UK_4, KK_1
8.	PhD student seminar	60		3-6	UW_1, UW_2, UK_1, UK_3, UK_4, UU_1, KK_1, KK_2

Description of the subjects:

1. and 2. Methodical workshop on didactics
− **group (4 hours plus voluntary 4 hours, 2nd semester);**
− **individual as part of internship (4 hours, 2nd semester)**

The methodical workshops are aimed at preparing the PhD students for independent teaching of classes in a higher education institution. They consist of:
(1) group workshops – class visitations conducted by the best educators. To the extent possible, these classes have different forms (lectures, practical classes, colloquia). The class visitation is carried out under the supervision of the lecturer licensed in pedagogy and encompasses not only participation in classes but also discussion of the classes observed (in total, at least 4 hours, including 2 hours of visitation).
(2) individual workshops – at least 2 hours of classes taught by the PhD students under the supervision and in the presence of an eminent educator or supervisor (plus an hour for joint preparation and an hour to discuss the classes, so this form encompasses in total at least 4 hours of classes counting as didactic internship hours).

3. Academic writing – 30 hours, 2nd semester

This workshop will teach PhD students how to successfully communicate the results of their research on a particular topic to the academic audience as well as aiming to help them to improve their writing skills. It will offer its participants the opportunity to work on their own academic papers and develop them from first ideas to early drafts. After choosing the topic of their papers and framing them, the attendees will be assisted in developing a detailed outline of their work by the teacher and through peer support. The students will learn how to properly structure their papers, develop the required sections, select sources and prepare the content. The workshop will also present the features of academic style and the recommended ways of referencing and formatting. The students will be advised how to choose a proper academic outlet and an effective publication strategy for their planned papers. They will learn about the reviewing process to be able to critically assess their work and deal effectively with future reviews.

4. Scientific development – individual classes with the supervisor (scholar's workshop) – 15 hours, 2nd and 3rd semester

Individualised classes, tailored to the specificity of a given PhD student and the dissertation s/he is preparing. They encompass both issues of a workshop nature (e.g. the selection of relevant research methods) and discussions on the current state of knowledge in the discipline as well as in the research questions and hypotheses formulated on this basis in the dissertation. The classes may also encompass works on the preparation of an application for a research grant.

5. Methodological and methodical classes in a form compliant with the 8th level of the programme of study (PRK) (120 hours, 2nd, 3rd and 4th semesters)

> PLEASE NOTE: the particular courses are started if they have been selected by at least 5 PhD students.

A. Compulsory classes (60 hours, 2nd semester)

1) Microeconomics (30 hours)

The aim of the course is to review issues and analytical methods of contemporary microeconomics. The course will show the intuition behind microeconomic assumptions and results. It will also provide practical examples and compare the theory with recent findings in behavioural and experimental economics. Muñoz-Garcia, Advanced Microeconomic Theory, An Intuitive Approach with Examples, the MIT Press, 2017 will serve as a basic text.

2) Quantitative Research Methodology for Social Sciences (30 hours)

The course focuses on the organization and systematization of knowledge in the field of social sciences methodology. It assumes that students during the first and second degree studies encountered basics of methodology and statistics, and also implemented their own research projects in practice. The first part is an introduction to the philosophical and epistemological basis of scientific research in social sciences. Then, the scientific research process is presented. Emphasis is placed on the measurement methods – the theory of questionnaires and tests, psychophysiological methods and the analysis of Internet data. As a summary, ethics of scientific research is presented, taking into account the importance of reliable data analysis and responsibility for scientific publication.

B. Classes to be selected (60 hours, semester 2-4)

Out of the subjects offered, each PhD student chooses at least 60 hours, within the period from II to 4th semester.

At the request of the Chairperson of the Scientific Council of the Discipline, the Scientific Council of the Fields, the PhD Student Self-government or the Head of the Doctoral School, it is possible to add or remove classes which can be selected. Such a change must be approved by the Board of the Doctoral School.

The Individual Research Plan will specify the classes to be fulfilled by a given PhD student.

Sample list of subjects:

1) Econometric and statistical modelling (60 hours)

The course will be divided into three parts. The first one will be an applied introduction to R, covering data import, export, saving codes, results, graphics, typical operations in data preparations and analysis, as well as the use of packages. The second part will focus on applied statistical modelling, covering i.a. statistical distributions, Monte Carlo simulations, and bootstrapping. The third part will be devoted to applied econometric modelling, including panel models and spatial models.

2) Microeconometrics (60 hours)

The aim of this course is to familiarize students with the methods used in modern, applied empirical research involving microeconomic data. Topics such as model specification, estimation and inference will be covered for each data type. All lectures will take place in computer lab, and will involve description of the given method and

analysis of the case studies to gain a better understanding. This course we will use an open source statistical software, R.

> PLEASE NOTE: upon simultaneous consent of the supervisor and the school manager, certain methodological and methodical classes may be passed through participation in renowned summer schools (including those conducted by international scientific organisations) or in the form of scientific internship.

6. Doctoral School seminar (32 hours – 16 hours 2nd semester, 16 hours 3rd semester)

The PhD students of the QPE programme participate in the seminar of the Doctoral School of Social Sciences or in the interdisciplinary seminar of the Interdisciplinary Doctoral School (MSD), for the number of hours established for the PhD students of the MSD.

7. QPE programme seminar (16 hours, 3rd semester)

The seminar is organised for all PhD students fulfilling the QPE programme. It is intended to discuss selected, most important scientific texts and research. PhD students take active part in presenting and discussing selected issues. The particular meetings may be conducted by various researchers specialising in the particular research problems under discussion. The whole seminar is coordinated by an employee responsible for the given subject.

8. PhD student seminar (60 hours, semester 3-6)

During the seminar, each PhD student has an opportunity to present the results of his/her research and discuss them with other PhD students and researchers of the University of Warsaw. Placing the seminar in the 6th semester makes it possible, on the one hand, to present mature (encompassing a significant part of the results) research projects and, on the other, to introduce potential corrections resulting from the discussions held during the seminar.

III. Internship

Form of internship
Each PhD student is required to complete 30 hours of internship. The internship may be commenced not earlier than during the 2nd semester (after passing the "Higher education didactics" classes).

Some internships have the form of individual didactic workshops described above. The remaining internship hours may be completed by the PhD student's participation in classes taught by the supervisor or the appointed educationalist, as well as in the form of classes taught by the PhD student himself/herself.

Learning outcomes::

> WG.2, WG.3, WG.4, UW.3, UK.2, UK.3, UU.1, UU.2, KO.1, KO.2, KR.1

IV. Additional classes
The PhD students at the QPE programme can additionally choose from a list of optional classes. Moreover, they can participate in the lectures offered by all the doctoral schools of the University of Warsaw.

The Individual Research Plan will specify the classes to be fulfilled by a given PhD student. Sample list of subjects offered to PhD students:

1) Psychology for economists (60 hours)

This course will introduce student to social psychological theory and research results that explain economic behaviour. Topics will include:

- How rational are of human choices?
- Cognitive mechanisms underlying decisions: schema, narratives
- Attitudes
- Social motivation and social emotions
- Self-structure and self-regulation, identity
- How individuals affect each other: social influence and social interdependence
- Group dynamics
- Prejudice and stereotypes
- Social processes, social change
- Social processes and new technology, social processes in social media

2) Choice Modelling (30 hours)

The aim of this course is to familiarize students with the methods used in modern, applied empirical research involving discrete choice data. Topics covered include data sources (revealed, stated preference), design of discrete choice experiments, stated preference survey methods, and econometric treatment. The course will cover both basic and advanced methods used in the literature. The course includes practical computer-based exercises (case studies). This course we will use an open source statistical software, R.

3) Behavioural Decision Science (30 hours)

The aims of this course are to introduce and deepen PhD students' understanding of quantitative theories of judgements, decision-making, behavioural science and cognitive psychology. This course will explore theories and research methods in the field of decision-making, judgements, behavioural economics and cognitive psychology. Moreover, the course will promote and encourage critical thinking (and discussions) about fundamental cognitive processes such as memory, categorisation, judgement and choice. The students will critically examine theoretical models of judgement and decision-making, behavioural economics, categorisation and memory. The course will also cover recent developments in behavioural science theories, as well as the impact of experience and categorisation on preference formation and choice. The course will also introduce students to applications of behavioural science, judgement and decision-making research in areas such as finance.

4) Complex systems in economy (30 hours)

The aim of this course is to familiarize students with concepts, methods and tools of complex systems approach and how they explain mechanisms by which simple psychological and social processes drive the dynamics of economic systems. A wide array of research topics will be presented, explaining economic processes using insights from complex systems.