

# Syllabus for doctoral studies in the subject of Economics at the School of Architecture and the Built Environment

General regulations and guidelines for doctoral studies are found in the comprehensive KTH regulations for doctoral studies. This syllabus complements those regulations and guidelines for doctoral studies in the subject of economics with specific instructions for the subject area.

The doctoral subject of Economics is part of the doctoral programme, “The Built Environment and Society: Management, Economics and Law”.

## 1 Subject Description

The subject of economics has strong connections to engineering science, mathematics and industrial economics. Historically, for example, economic production theory was developed and nourished by engineering science and financial mathematics currently plays a key role in the rapidly growing part of economics known as financial economics. There are also significant interfaces between optimization theory and the economical analysis of equilibrium conditions in different markets, and, for example, between technological development and opportunities to establish new markets. Ongoing globalization of different markets requires, like many recent pricing and charging systems, modern information and communication technologies.

## 2 Goals of the programme

The overall goals for doctoral studies in the subject of Economics correspond to the objectives for KTH doctoral studies. They are set out in the box below:

The purpose of KTH doctoral studies is to provide society with competent researchers who can contribute to its sustainable development.

The goal of KTH doctoral studies is for doctoral students to become independent and excellent researchers. After completing their studies, doctoral students will be able to:

- describe and explain theories and empirical results in the field in question
- formulate specific research issues in the field in question
- use scientific method and develop new knowledge through their own scientific studies
- critically analyze and evaluate the methods and results from own and others' scientific studies
- present and discuss research findings in the scientific community
- present research in an educational way outside the scientific community and in educational contexts
- assess the ethical aspects of research within the field in question and act on these
- identify needs for new knowledge, and understand how to initiate and direct research projects

Education at doctoral level shall also strive to ensure that students after graduation are able to:

- participate in interdisciplinary collaboration within the field in question
- analyze the role of research in sustainable development.

Doctoral studies in economics aim at providing students with in-depth knowledge of economic theory and good ability to apply economic theory. Students will also gain critical aware-

ness, skills in research methodology and independent research experience, and after completing doctoral studies they will be well prepared for continued scientific activities.

### **3 General structure of the programme**

Doctoral studies consist of coursework and a thesis/dissertation part. Coursework may be in the form of lectures, literature studies and problem-solving, as well as active participation in seminars and conferences. Courses may be studied within the department or in collaboration with other national and international research institutions. Most of the coursework will be covered in the initial part of the programme.

Doctoral studies are conducted under the direction of a main supervisor, together with one or more assistant supervisors in accordance with an individual study plan approved by the doctoral programme officer. Students' individual study plans will be adapted to the area of specialization of their dissertation/thesis. Students' progress will be assessed at least once a year in connection with a review of the individual study plan jointly carried out by the student and the main supervisor.

A licentiate degree may be taken as part of a doctor's degree or in conclusion of doctoral studies. Courses and dissertation work included in a licentiate degree may also be credited towards a doctor's degree.

### **4 Eligibility**

Admission to the doctoral program requires that the applicant has a Master's degree in economics, econometrics, or statistics, or an equivalent degree to a Swedish Master of Science.

### **5 Admissions and selection**

Admission of students to doctoral studies is granted by the dean of the school. The basis for selection is the ability to assimilate doctoral studies. Selection is firstly made on the basis of documented materials supplied by the applicant. In addition, other bases for decision such as interviews with the candidates and contacts from previous educational programmes may be of importance. Students must be prepared to devote at least 50% of their time to doctoral studies. For the doctoral programme, only the number of students that can be offered acceptable conditions in terms of supervision, funding and study conditions in general may be admitted.

### **6 Structure of the programme and main contents**

#### *6.1 Structure of the programme*

The doctoral studies programme consists of coursework of at least 90 ECTS and a thesis of 150 ECTS. A licentiate degree shall include at least 45 ECTS of coursework and a licentiate dissertation of 75 ECTS.

#### *6.2 Courses*

Compulsory courses totalling 30 ECTS, including courses in Scientific theory and research methodology, Quantitative methodology (econometrics) 7.5 ECTS, Qualitative methodology

(7.5 ECTS) and a common introductory course for the doctoral programme (7.5 ECTS) – refer to the description of the doctoral programme for further details.

Other basic courses and advanced courses for 60 ECTS.

The courses aim to provide a breadth of theoretical knowledge in micro and macro theory, econometrics and scientific theory with the history of economic doctrines. The main part of the basic courses are shared with the doctoral programmes at the University of Stockholm and the Stockholm School of Economics. The advanced courses provide specialization in the subject areas and are established after consultation between the supervisor and the student. The programme has applied microeconomics as its primary area of specialization. Areas of application are oriented towards engineering and community planning, and include transport economics, urban and regional economics and industrial economics.

Doctoral students who teach in education at first or second levels must have completed initial university teacher training.

### *6.3 Dissertation/thesis*

The student must write a dissertation/thesis defended in public at a viva voce. The dissertation/thesis must demonstrate the student's ability to independently examine a research problem of importance in the field of economics. The dissertation/thesis may be in the form of a single work or a compilation of several essays of sufficient quality for publication in good international journals with peer review. The student should generally begin dissertation/thesis work after the first year of study and thus carry out dissertation/thesis work in parallel with the remaining course studies.

## **7 Teaching**

Teaching consists mainly of lectures, seminars and tutorials. During the programme, students must participate in scientific activities at the department through attending seminars, guest lectures, etc. Corresponding activities at other departments may also be included in the programme. Teaching and examinations at another department or university may be included with the consent of the main supervisor.

## **8 Tutorial**

The student has the right to supervision during all the time considered necessary for training of 240 ECTS with a maximum of five years and not more than what corresponds to four years of study. From that time shall be set off such a time during which the student has been on parental leave, or because of illness for a long time has been unable to pursue the studies, has completed military service or worked as a union representative. Together with the supervisor, the student will prepare a plan for the postgraduate studies, which shall be followed up at least once every semester. The supervisor is responsible for advising on focus, scope and the implementation of dissertation/thesis work.

## **9 Eligibility**

The KTH general eligibility requirements for admission to doctoral studies apply.

## **10 Examination**

Examination takes place through written or oral exams or through presentations at seminars. Exams and tests are graded as pass or fail. The examination shall be designed so that examiners can be satisfied that a student has assimilated the full course content.

The grade of a thesis (pass/fail) is determined by an examining committee appointed by the school's doctoral programme officer.

## **11 Licentiate degree**

One stage of the doctoral programme of 120 ECTS may be concluded with a licentiate degree. Requirements for a licentiate degree are that the tests in phase one are passed and that a dissertation of 75 ECTS is passed. Obligatory courses for the licentiate degree comprise the course Scientific theory and research methodology, and at least one of the other obligatory courses.