



**Programme description**

**Reference number:** V-2023-0331 3.2.3

**Doctoral Programme**

**Valid from:** 2023-06-13

**Revised as of:** 2023-06-13

## **Programme description: Doctoral Programme in Mathematics**

### **Programme name in English**

Mathematics

### **Indicate the third-cycle subjects included in the programme.**

Mathematics

### **Programme organisation**

The programme has a programme director (PA) and a programme council. The programme council consists of the PA, 1-2 doctoral student representatives (PAD) and 4 supervisors. The tasks of the programme council include programme development, course planning, monitoring and evaluation. Student representatives are chosen according to the guidelines for student influence and the school's student influence routines. The programme council meets at least once per semester.

The graduate courses within the programme are planned and implemented in close collaboration with SU and SMC (Stockholm Mathematics Centre). Some research seminars and the PhD seminar are also organised together with SU and SMC.

Recruitment recommendations are prepared by a doctoral committee, consisting of 4 supervisors, in co-operation with the PA.

### **Courses**

#### *Range of courses offered*

The list of current graduate courses can be found on the Department's website under "Studies/Graduate Level", currently: <https://www.kth.se/math/studies/graduate/matematik>

There is one compulsory, programme-wide course, FSF3000 (focusing on sustainability, gender equality and ethics).

Graduate courses are planned and decided annually for the subsequent academic year. Proposals are prepared by the PA and their counterpart at SU and are decided by the programme council and its counterpart at SU. Priority among course proposals is given to ensuring a range of broad and regular courses covering the three breadth areas of analysis, algebra/combinatorics/logic and geometry/topology. The remaining courses are chosen from proposals by KTH and SU teachers, which are collected by the PAs, and requests from doctoral students, which are collected by the PA and PAD. Additional, more specialised courses can be offered as long as they are in principle open to all students meeting the course prerequisites.

Each year, there should be 2-3 broad doctoral courses, i.e., third-cycle courses that are aimed at doctoral students in all mathematical fields. These courses will ensure that the requirement for breadth of education can be met by all doctoral students.

### *Quality assurance and monitoring of programme courses*

Course analyses should be carried out for each graduate course. These course analyses are discussed and evaluated in the programme council and published on KTH's course or doctoral student website.

### **Other programme content and support for the programme's doctoral students**

The Department of Mathematics at KTH, together with the Department of Mathematics at Stockholm University, has more than ten regular seminar series. Doctoral students are expected to follow some seminar series, such as the doctoral seminar that is shared with the doctoral programme in Applied Mathematics. The programme regularly organises alumni meetings and programme-wide activities, such as introductory meetings and on-boarding.

### **Description of the continuous, systematic quality-enhancement activities of the programme**

Systematic quality-enhancement activities are mostly focused on courses, student progress and the quality of supervision.

Quality-enhancement of courses is based on the course analyses. These are discussed in the programme council, which, in collaboration with the course examiner and the PA, may recommend or require changes to courses, the discontinuation of courses, or more regular courses.

Student progress is monitored through individual study plans and annual meetings of supervisory groups. A supervisory group consists of the student's supervisor, the PA, and 3-4 supervisors of students in the same cohort. At meetings, on the basis of the individual study plans, student progress is discussed and monitored, as are any problems.

The quality of supervision is discussed at the doctoral students' annual performance review with the director of the department and, if necessary, in supervisory group meetings.

Improvements to the implementation of the doctoral programme, both in courses and in supervision, can be proposed and should thus lead, through discussion in the programme council, to quality enhancement.

In addition to the above, the programme is a part of KTH's working environment and is independently evaluated through working environment surveys, giving participants greater anonymity protection.