

# Doctoral Course in Mathematical Sciences

## Requirements for the individual training plan

### Introduction

The individual training plan **forecasts/includes**:

1. A research project, prepared in collaboration with the supervisor.
2. Completing the following educational/training duties:
  - passing the exam of at least four courses from the catalogue, among which at least two must be taken from the list of “Courses of the Doctoral Program”, while at most one can be taken among the list of “reading courses”
  - participating in at least one activity among the “soft skills”
  - attending at least two more courses (for such activities the PhD student must produce a brief summary on what she/he learned. These summaries should be attached to the annual report)
3. Participating to the “Seminario Dottorato” and attending the seminars of the student’s research group.
4. It is also possible to attend Summer Schools and courses of other Doctoral Programs; the number of credits recognized for these activities will be decided case by case.
5. Research and training periods abroad are encouraged.

### Individual Training Plan (objectives and definitions)

#### Objectives

The objective of the training plan is to educate a researcher with both a broad mathematical and scientific culture, and advanced competences in his/her research area. Some courses -- among which those of the Doctoral Program -- aim at broadening the student’s culture, while some others are specialistic. In order to develop and improve the capability of presenting their results, and as an incentive to collaborating, students are requested to deliver a talk at the “*Seminario Dottorato*”.

#### Training Plan

The types of activities that students can undertake to fulfill the requirements of their individual training plans are described in the Course Catalogue, which is posted on the website of the Doctorate Program at the beginning of each academic year, and is then updated during the year. These activities are described in what follows

#### Course

A Course is a teaching activity that consists of a series of frontal lessons, for a total of 8 up to 24 hours, delivered over several days and followed by a final examination. Passing the final exam, the students obtains the credits for the course. Attending courses and other training activities without taking the final exam does not give credits but is encouraged. Students must enrol to each course through the website of the PhD Program. By doing so they commit to attend the course; cancellations are possible, up to one month before the beginning of each course. All courses are delivered in English.

#### Seminar

A seminar is a presentation of about one hour, without final examination. Seminars are given by qualified personnel, including Doctoral students, on research and highly specialized topics.

## Individual Training Plan Activities

### **General course**

Students must attend, and pass the examination of at least two Courses of the Doctoral Program (common to both curricula). Five or six courses are offered each year; they may change from year to year. These courses are listed in the online Course Catalogue.

### **Sectorial/specific course**

Student must attend and pass exams of, at least, two more courses in the Catalogue between the courses of the Doctoral Program and the one for the curricula. Several courses for the two Curricula are offered each year, lasting 12 to 16 hours each. Their topics may change from year to year. Courses from other Doctoral Programs, Summer Schools and master courses can be taken as well as substitutes for these courses. The interested student must apply and, in all cases, at most one such course can be credited.

### **Soft skills courses**

Students are encouraged to attend soft skills courses. Some of these courses are listed on the online Course Catalogue. It is mandatory to attend at least one soft skill activity.

### **Seminars**

Students must regularly participate in the “Seminario Dottorato”. Within the three years, each student must give at least one talk within the “Seminario Dottorato” on her/his own research topics and results. Students are encouraged to attend the seminars of their research group.

### **Group activities**

Self-organized collaboration activities are encouraged, through dedicated discussion spaces.

### **Schools**

Schools may be used to fulfill part of the training duties, provided that they have a final examination. The number of credits recognized for these activities will be decided case by case.

### **Other training activities**

Training activities offered by other Doctoral Programs at UNIPD and other Italian and non-Italian Universities may be used to fulfil part of the training duties. In particular, there is an exchange agreement with the Doctoral Program in Information Engineering, and some of their courses are listed in our Course Catalogue.

The Doctoral Program considers very important for the Students’ training, and warmly encourages, research and study periods at top-rank Departments of foreign Universities.

### **Participation to conferences**

Students are strongly encouraged to participate in conferences, presenting whenever possible their research results. Travelling and participation expenses are covered with the funds of the Doctoral Program and with the research funds of the supervisors

### **Tutoring activities**

Students are encouraged to do paid teaching (tutoring) activities. At most two contracts are in general allowed.