PhD Program in Mathematical Sciences
Opening day 2023/24

Giovanni Colombo
PhD Program Coordinator
Website: https://dottorato.math.unipd.it

Padova, October 4, 2023

► 15.00 Presentation of the program
► 16:00 Seminario Dottorato: talk by Martina Costa Cesari
► 17:00 + epsilon: welcome toast at the ground floor.
Welcome to the Department of Mathematics of the University of Padova, that is named after Tullio Levi-Civita.
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The University of Padova celebrated last year its first 800 years of life, as it was founded in 1222. Several events were planned, including an international conference with three Fields medalists.
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The city of Padova features two items from the UNESCO World Heritage List: the University Botanical Garden and the cycles of frescoes in some churches (in particular Giotto’s Scrovegni Chapel, 5 minutes from here).
Welcome to the new students of XXXIX cycle:

Matteo BERGAMASCHI
Francesca BERLINGHIERI
Gaia BOMBARDIERI
Giacomo CAPPELLAZZO
Giacomo COZZI
Nicolò DE BERNARDI
David KLOMPENHOUWER
Davide MASSENZ
Ludovico MORELLATO
Nowras NAUFEL
Emanuele PASQUI
Anastasios SLAFTSOS
Runlei XIAO

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Who’s who in the Program

- Coordinator of the PhD Program (Giovanni Colombo)
- Deputy Coordinator: Martino Bardi
- Delegates for the two curricula: Davide Vittone, Marco Di Summa
- Further members of the Executive Board ("Consiglio Direttivo"): Giovanna Carnovale, Eloisa Detomi, Francesco Fassò, Markus Fischer, Martino Grasselli, Matteo Longo, Mario Putti, Paolo Rossi.
- Faculty Board of the PhD Program ("Collegio Docenti"): see next slides.
- Organizers of the Graduate Seminars ("Seminario Dottorato"): C. Marastoni and T. Vargiolu
- **Mediator**: Silvia Crafa

- Administrative Contact Person of the Doctoral Course (III floor): Loretta Dalla Costa

- **Representatives** of PhD students in the Faculty boards: Marco Baracchini, Martina Costa Cesari, Elena Danesi, Elisabetta Masut, Davide Redaelli, Luca Talamini, Pietro Vanni, Elisa Marini

  (soon to be elected a new set of 12 representatives); those in red are also representatives in the Executive Board
Research in mathematics in Padova

The Faculty Board: it contains more than 70 people. Look at Research areas in the webpage of the Department.
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Massimo Fornasier, Prof. at T.U.M., Germany: image processing, numerics of PDEs, high-dim. optimization, mathematics of data science.
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1. Activities of the Program

- Research
- Seminars
- Courses
Research

This is the most important part of your work as a Ph.D. student.

▶ **First year students**: propose a thesis supervisor(s) and write with her/him a program by the end of December (an announcement will be sent); then the Faculty Board will officially assign a supervisor to each of you.
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▶ Attend regularly the seminars
  ▶ of your field of research, and participate in discussions.
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- Graduate seminars (see next slide)
- Department Colloquia also planned for PhD students and young researchers.
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- **Attend regularly the seminars**
  - of your field of research, and participate in discussions.
  - **Graduate seminars** (see next slide)
  - **Department Colloquia** also planned for PhD students and young researchers.

- **Keep frequent contacts with your supervisor**, informing him/her of both progresses and difficulties. Plan activities with him/her: attending meetings/courses, applying for periods of study abroad,....
The Seminario Dottorato (Graduate Seminar) is a series of lectures by and for the Ph.D. students and possibly post-docs in Mathematics and Computational Mathematics. PhD students have the opportunity to communicate their research to an audience of educated mathematicians who are not specialists in their field. It is a good opportunity to learn how to deliver a good seminar (or a bad one...). Occasionally the seminar hosts senior researchers who will speak along the same line. Seminario Dottorato is open to the Department.

The seminar is normally held twice a month (usually on Wednesday afternoon), by alternating lectures in Pure and Computational Math.

Learn how to deliver a general lecture on your research in the Colloquia of the Department.
Courses

- Each year the Department offers courses and publishes a catalogue with programs and schedules (see requirements).

- Besides the courses related to your research topics, introductory courses on other subjects are highly recommended.

- Calendar online

- Not all students enter the Doctoral Course with the same background. In some cases the supervisor may recommend attendance to courses of the Master Degree in Mathematics, which are all open to Ph.D. students.
Requirements to meet

A) **Courses.** Students are required, within the first two years, to follow and pass the exam of

- At least 2 courses of the Program (24 hours each);
- other courses, in addition to the two above, chosen from the catalogue, with total commitment of at least two more courses.
- Credits may also be assigned for courses taken in other departments or universities, on a case-by-case basis, upon request (at most one can be credited). *You need to apply.*
- Credits for exams of Master’s Courses will be acknowledged on a case-by-case basis by the Faculty Board, upon request and in accordance with the supervisor. *You need to apply.*
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- Credits for exams of Master’s Courses will be acknowledged on a case-by-case basis by the Faculty Board, upon request and in accordance with the supervisor. **You need to apply.**
- It is also mandatory to attend two more courses without passing the exam.
B) "Soft skills activities/courses" are recommended and at least one is mandatory.
Old: 1) participating in popularization activities (KidsUniversity, Science4all, ...); 2) preparing an academic CV; 3) preparing an application for a post doctoral position.

New: 4) Introduction to the use of Mathematica in Mathematics and Science (6 hours, starting soon); 5) Use and analysis of bibliographic databases (run also by experts from the library).

**Note:** A half of the requirements is recommended within the first year. Plan to **attend further courses even without taking the final exam**
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Note: A half of the requirements is recommended within the first year. Plan to attend further courses even without taking the final exam because there are more things in Earth and Heaven than ideas in your (in OUR) mathematics.
Please note:

▶ **Online registration** through the Course’s webpage is **strictly required**, independently of the intention to take the exam or just attend the lectures. For the courses starting in the first semester please register as soon as possible. For other courses planned for the year 2023, the deadline for registration is **December 30th**.

▶ **Students** are expected to attend regularly the activities of the courses they are registered to.  
**Remark**: follow your taste, but also discuss with your supervisor the choice of the courses to take.

▶ **Seminars** do not appear in the Catalogue of the Courses, even when they are meant for Ph.D. students and young researchers. You may receive announcements for these seminars from your research group, but also check regularly the web page of the department.
B) **Annual report.** By the end of August of each year PhD students must write a report indicating the activities done (courses taken, exams passed, participation to conferences...) and the status of the thesis. Learn how to upload your papers on the web site IRIS.

C) **Thesis.**
Within the end of the third year, on the basis of a draft of the thesis (due by the end of August), your final three year report, and a report of your supervisor, the Faculty Board decides on the admission to the **Final evaluation**, consisting of two steps: report of two external referees, and defense of the thesis in front of a committee.

**The deadline of 3 years is rather sharp, as extensions are allowed, but not completely easy to obtain.**
Conferences, schools, visits abroad...

You are encouraged to participate in Conferences and Schools, and/or to spend periods of research in foreign institutions (for up to 12 or 18 months in case of a formal cotutelle). The PhD Programme co-finances these activities: each student has $\sim 3000$ EUR for travels.

- Plan these activities with your supervisor.
- Long ($\geq 15$ days) visits to foreign institutions are supported by the University ($+50\%$ of fellowship for at most 12/18 months).

- For these visits you need:
  - To obtain the authorization from the Executive Board.
  - To apply for the increase of the fellowship, contact Mrs. Dalla Costa and Ufficio Dottorato e Post Lauream. The application form must be signed by the Coordinator.

- Well before the beginning of the trip, contact the administration office of the Department (III floor), and fill out the appropriate forms.
For the **desk** assignment, office key, forms for requests of extension of fellowship and teaching activities, refer to the Secretary of the Doctoral Course **Mrs. Loretta Dalla Costa**, 3rd floor.
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SPEND TIME HERE! DON’T WORK ONLY AT HOME!
Accounts on our server, PCs

- For computer accounts refer to Mr. L. Cappello (who also manages the web page) or A. Talami, 3rd floor.

**IMPORTANT:**

- get immediately your account of the Department’s server;
- check regularly your email on this account: all messages concerning the doctoral program will be sent to that address! **Warning:** your address at our department will be: `username@math.unipd.it`. Your institutional (UNIPD) address is instead `something@phd.unipd.it`. This address is required to authenticate on all services provided by the central administration (e.g. Moodle, applying for travels,...). But all emails concerning our activities will be sent to your `@math.unipd.it` address.

Do you need a PC? Ask for a (used) one to the "Tecnici informatici", 3rd floor. But some students at the end of their PhD organized buying some laptops with the travel money they could not use during Covid time.
Library

- We have an excellent library on floor -1, Stair A.
- We subscribe to most mathematical journals, many are also available online from your new account ....@math.unipd.it or ...@unipd.it (from home you have to use a proxy).
- The Library Committee has a representative of Ph.D. students: Luca Talamini
Teaching and tutoring

Doctoral students are allowed to do either one of the following activities, for which they can get an additional salary:

- support teaching ("didattica di supporto") for undergraduate courses (up to 40 hours per academic year), under a contract with our Department;

- Tutoring ("Tutorato", e.g., Math-4U) for undergraduate courses (each contract is for 24 hours in class + 26 hours to prepare the class), under a contract with the University. At most two contracts of this type can be signed.

You first need permission of the Executive Board after the recommendation of the supervisor to apply for it (not allowed during the first year).

Teaching that gives credit to students ("=teaching (part of) courses") is not allowed.
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Part time jobs are not allowed.
Other general suggestions

▶ When you write a paper or give a presentation to a Conference, do not forget to indicate you affiliation to the Department of Mathematics and to acknowledge the financial support received.

▶ For foreign students: check that all bureaucratic requirements have been met. Refer to: Loretta Dalla Costa and Ufficio Dottorato e Post Lauream. Remember that the central administration has a service that is dedicated to visa and “permesso di soggiorno” (=stay permit): please visit the site of S.A.O.S.
Questions?

For questions or problems contact

- Your supervisor (once you have it...)
- Giovanni Colombo, Coordinator of the Doctoral Course
- Martino Bardi, Vice-coordinator
- the delegate for your Curriculum: Davide Vittone “Mathematics”, Marco Di Summa, “Computational Mathematics”,
- the mediator: Silvia Crafa (but not for bureaucracy or organization)
- and, last but not least,
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other statements (“tu”, Zurigo, la pasta, la sveglia, alti e bassi)
My best wishes to all of you!