Graduate Student Orientation

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Department of Mathematics
Virginia Tech
Overview

- Advisor Assignments
- Information Sources
- Degree Options and Requirements Summary
- Overview of Course Offerings
<table>
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<tr>
<th>student</th>
<th>advisor</th>
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<tbody>
<tr>
<td>Jane Doe</td>
<td>Eric de Sturler</td>
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Sources of Information

- Available courses
  - Timetable of Classes (times and locations
    http://www.hokiespa.vt.edu/ → Timetable of Classes)
- Mathematics degree requirements
  - Graduate Programs in Mathematics: Policies and Degree Requirements: http://www.math.vt.edu/ → Graduate Program → Advising
- People
  - Your advisor
  - Rachel Arnold (GTA coordinator)
  - Matthias Chung (1st year advising coordinator)
  - Nicole Sutphin (graduate secretary)
  - SGTAs
Degree Options

• M.S. Options
  • Standard or Interdisciplinary
  • Thesis or Non-thesis

• M.S. Requirements
  • 30 credit hours of coursework
  • Maximum of 6 hours at 4000 level
  • Thesis, or 2 written prelims, or masters presentation

• Ph.D. Program
  • Acceptance by the appropriate faculty committee
  • 90 hours (courses + research hours + M.S. hours)
  • 2 written prelims + oral exam
  • Dissertation and defense
M.S. Course Requirements

• Background
  • Abstract Algebra (5125) or equivalent
  • Real Analysis (4225,6) or equivalent
  • Computation (algorithm development, implementation and application) numerical analysis, computer science, engineering, ...

• Concentration
  • one approved sequence or cluster – see Grad. Programs in Math.
Typical Schedule for First and Second Year Students

- Full load is 12 credit hours. (Permission needed for more than 18.)
- You must be registered for 12 credits to hold a GTA/GRA.
- Typical load: 9 credits of courses + 3 credits of “research” (Math 5994).
- Math 5994 hours apply toward the required 30 hours only for thesis option.
- You are required to attend 6 seminars per semester and Research Days in Spring.
- Note: Only 6 credits of 4000 level courses can count toward your degree.
Fall 2020 – Spring 2021

Courses in blue appropriate for 1st year students
Courses with a P are prelim prep courses
Analysis Courses

- Elementary Reals (4225-6) Fall-Spring
- Reals (5225) Fall P
- Complex Analysis 1 (5235) Spring P
- Stochastic Analysis (5214) Fall
- Intro to Functional Analysis (5214) Spring P
- Functional Analysis (6255-6) Fall-Spring P
- Complex Analysis 2 (5236) Fall
- Smooth Manifolds (5344) Fall
- Differential Geometry (6324) Spring
Algebra Courses

• Algebra (5125-6) Fall-Spring \( \text{P} \)
• Topics in Algebra (5114) Spring
• Matrix Theory (5524) Spring
• Graph Theory (5454) Fall
• Combinatorics (5464) Spring
• ODEs (5245-6) Fall-Spring P (5245)
• Applied PDEs (5425) Spring P
• Calculus of Variations (5545-6) Fall-Spring
Computational Mathematics Courses

- Numerical Analysis (4445,6) Both in Fall-Spring
- Neither course a prereq of the other
- Numerical Linear Algebra (5424) Fall P
- Approx Theory (5554) Spring P
- Finite Differences (5474) Fall
- Finite Elements (5484) Spring P
- Numerical Methods and Software (5486) Fall
Mathematical Biology Courses

- Mod. and Sim. of Biol. Syst (5515,6) Fall-Spring
  Neither course a prereq of the other
Mathematical Education Courses

• Mathematics Education Seminar (5894) Fall
• Res. In Mathematics Education (5634) Spring
Special Topic Courses

- Fluid Dynamics
- Model Reduction
- Optimization
- Discontinuous Galerkin Methods
- More in the Spring
You must register using hokiespa for all courses except Math 4225. See Tammi for this course.
If you have problems email to Matthias Chung mcchung@vt.edu