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

Advisor Assignment

student	advisor
Jane Doe	Eric de Sturler

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.

Course Offerings

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 P
- Topics in Algebra (5114) Spring
- Matrix Theory (5524) Spring
- Graph Theory (5454) Fall
- Combinatorics (5464) Spring

Differential Equation Courses

- 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

Advising

- 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