Nico Courts

University of Washington
Department of Mathematics
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OBJECTIVE To pursue my passion for mathematics and to understand how to better the world through its proliferation and application.

EDUCATION

Ph.D., Mathematics, September 2016 – June 2021 (expected)
University of Washington, Seattle, WA

Bachelor of Science, Mathematics, May 2016 GPA: 3.83
Magna Cum Laude, Dean's List, Departmental Honors
University of Southern California, Los Angeles, CA

Budapest Semesters in Mathematics, Fall 2015 GPA: 3.90
Algebraic Topology, Conjecture & Proof, Cryptography, Differential Geometry
Budapest, Hungary

Associates of Science, Mathematics, June 2013 GPA: 4.00
Key of Knowledge, Dean's list, Honors Program
Citrus College, Glendora, CA

RESEARCH EXPERIENCE

Graduate Reading Courses
University of Washington, Seattle, WA

- Abelian Categories – Prof. James Zhang – *Spring 2018*
- Representation Theory – Prof. Julia Pevtsova – *Winter/Spring 2017*
- Cohomology – Prof. Steve Mitchell – *Autumn 2016*

Undergraduate Reading Courses
University of Southern California, Los Angeles, CA

- **Tools in Modern Representation Theory**. Dr. Paul Sobaje supervised me as I explored some of the techniques used at the frontiers of algebraic research – in particular, techniques that have been recently pioneered in the field of representation theory. I encountered scattered topics in representations, categories, algebraic topology, module theory, Lie algebras, and support varieties. *Spring 2015*
- **Commutative Rings, Fields, and Galois Theory**. Under the direction of Prof. Charles Lanski, I explored topics in graduate algebra with the intent of understanding Galois theory and its applications. *Fall 2014*

TEACHING EXPERIENCE

Graduate Teaching Assistant Autumn 2016 – Present
University of Washington, Seattle, WA

- **As an instructor:**
  - Math 124 (Summer 2018) – I put my own twist on the standard Calc I curriculum by deciding to focus on high-level understanding along with cultivating problem-solving techniques and a mathematical mindset. This idea was loosely based on that of the flipped classroom; students were

encouraged using quizzes to read the textbook before any material was discussed in class and large portions of contact time with instructors were dedicated to working on challenging problem sets and presenting solutions to the class.

Technology was used frequently and liberally as a way to both bolster understanding through visual aids and as a means to solicit frequent feedback from students to monitor their understanding and progress.

- **As a teaching assistant:** Participated in several aspects of instruction including demonstration of problem-solving techniques, student evaluation, and the administrative process.
  - Math 120 (Autumn 2017)
  - Math 124 (Winter 2017)
  - Math 125 (Autumn 2016, Spring 2017)
  - Math 126 (Summer 2017, Winter 2018, Spring 2018)

Lead Teaching Assistant Summer 2016
SCS Noonan Scholars (previously South Central Scholars), Los Angeles, CA

- Independently developed and delivered approximately 50 hours of instruction and five exams to gifted university-bound students in calculus 2 and 3.
- Total of 100 contact hours, including daily supervised worksheet sessions.
- Took the initiative to deliver weekly lectures in higher mathematics (number theory, knot theory, differential equations, etc.) along with entry-level problems that allowed students to get a sense of the "flavor" of these fields.

Various Teaching and Mentorship Positions Spring 2012 – Summer 2013
Citrus College, Glendora, CA

- **PAGE Program Tutor**. Assisted a licensed teacher in the education of a class of middle school children intended to reinforce the previous year's learning and to prevent "backsliding". Personally instructed a small group of students who were prepared to learn more advanced topics in intermediate algebra.
- **SIGMA Mentor**. Took on a small group of students each semester utilizing a holistic approach to education – supplementing standard tutoring with more in-depth educational guidance and planning.
- **Math Tutor**. Instructed students in the fast-paced Math Success Center where I provided homework help in all math classes through linear algebra and differential equations.

SKILLS & HOBBIES

Languages:

- **English** – This is my native language.
- **German** – Ich kann ziemlich gut Deutsch sprechen, lesen, und verstehen!
- **Hungarian** – Beszélek csak egy kicsit magyarul.
- **Programming** – C++, C#, Go, Haskell, Java, LaTeX, PHP, Python.

Computer Skills: Web/Application Development, Server Administration, Sage, Mathematica, Windows, Linux, FreeBSD.

Life Skills: Critical Thinking, Abstract Reasoning, Communication, Objectivity, Empathy.

Hobbies: Hiking, Jogging, Rollerskating, Appreciating the Wonders of the PNW.