Welcome to the UCI Math Department!

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Outline

Introduction to the Math Major

Tips for Success

How to get Involved
Who are you?

• Math majors?
• Undecided?
• Freshmen?
• Transfer students?

• UCI Math department is approximately 1200 undergraduates
• Approximately 120 graduate students
• Approximately 50 permanent faculty
Why be a Math Major?

• What’s the most useful skill you learn?
Why be a Math Major?

• What’s the most useful skill you learn?
• I think the most useful skill you learn as a math major is the ability to reason precisely and logically
• Corollary 1: Proof writing is important for all of you!
• Corollary 2: Math 13 is probably the most critical class for your success as a math major
## Seven Tracks in the Math Major

- Pure Mathematics
- Data Science
- Math Finance
- Applied and Computational Math
- Math Biology
- Math Education
- Math Education/Secondary Teacher Certification
Tracks in the Math Major

• You typically apply in your sophomore or junior year
• No application necessary for the Pure Math Major (the default)
• Some courses should be taken in your sophomore year at the latest
Which track for which career?

• (No right answer!)
• Work in Big Data? Data Science or Applied and Computational Math
• Be an Actuary? Math Finance
• Work at a Medical Research Lab? Math Biology
• Be a Math Teacher? Math Education

• Pure Math Major offers the most freedom to choose electives
How do classes work?

- Usually 5 meetings per week
- Usually 3 lectures and 2 discussion sections each week
- 35-50% of the course grade is the (cumulative) final exam
- Usually 1 or 2 midterms
- Weekly homework (not always graded) and quizzes
What’s the point of Homework?

• Helps you know what the professor thinks is important
• Practice (it’s crucial)
• Keeps you on pace with the class

• Not as important for assigning grades
• For assigning grades, the midterms and final are more important
Study tips 1

• Research shows repetition is **not** an effective study method
• It might help you remember that the derivative of $\cos(x)$ is $-\sin(x)$
• But it won’t help you understand what the derivative means
• To succeed in your classes, memorization is not enough. The midterms and finals are testing understanding.
• Try to make flash cards, rewrite theorems in your own words, write your own practice questions, ask why hypotheses are necessary, try to find examples
Study tips 2

• UCI is on the quarter system, so the pace is very fast. Don’t fall behind!

• Go to office hours. If you’re concerned about your grade, talk to the professor and TA early, not after the final exam.

• Expect to read the textbook. Not everything will make sense in lecture the first time you hear it.

• Pay special attention to definitions, make sure you understand them. Find examples.

• You learn better reading from a physical book than from a screen.
How to get involved?

Anteater Math Club
Abelian Grapes
Math CEO
UCI Actuarial Society
Math Finance Club at UCI
Anteater Math Club

• Anteater Math Club

• Open to everyone who enjoys math and wants to meet new people

• Hosts social outings, career explorations, and talks about math, graduate school, undergraduate research etc

• Annual Integration Bee (students go head to head to see who can solve complex integrals the fastest)

• https://sites.google.com/site/anteatersmathclub/

• mathclub.uci@gmail.com

• President: Duo Lin (questions for president: duol4@uci.edu)

• Typically meets on Monday @5pm (location: TBA)
Abelian Grapes

- **Abelian Grapes** (Ex Math Anteater Community)
- Encourages friendships: A group of math majors who like joking around, talking about math, math memes, and eating out every Friday
- Creates a close-knit group of proactive undergrad math majors. Encourages sharing mathematical ideas and experiences
- President: Leonard Megliola
- **lmegliol@uci.edu** (groupchat on WeChat app)
- Typically meets on Friday @3pm in RH 510R (TBC)
UCI Math CEO

**Math CEO:** Volunteer and gain teaching experience

- Help underprivileged middle school students from Santa Ana develop math skills + college knowledge
- Volunteering opportunities: T 9-10, W 2-4 @ UCI, T 2:45-3:45, T 4-5 @ Santa Ana
- Training (optional, but highly recommended)
- 2hrs training + 2 hrs fieldwork = 2 units (Math 192)
- More info: mathceo@math.uci.edu, or apantano@uci.edu
Math Finance Club @UCI

• Math Finance Club @UCI
  • Connects students in the concentration with financial professionals in the real world
  • Fosters students’ passion for mathematical finance and support each other’s studies and job searches
  • Join Facebook group (@UCI Math Finance Club) to participate in Kaggle competition this fall.
  • President: Spencer Yu
  • mathfinanceclub@uci.edu
  • https://clubs.uci.edu/mathfinanceclub/
  • Typically meets on Tuesday @7.30pm in NS2 1201
UCI Actuarial Society

- Meets Thursday at 7-8pm
- Brings together undergraduates interested in actuarial sciences.
- They host events to provide social and professional development: e.g., talks by actuarial speakers, resume workshops, and technical workshops.
- They also provide exam support and answer career questions.
- President: Umar Shafi
- actuariaisociety@uci.edu
- http://www.clubs.uci.edu/actuarialsoceity/
Tips if you want to start Math Research

• No easy path, especially as freshmen
• Math 199 (sometimes it’s research, often it’s directed reading)
• Get to know your professors: Attend office hours! Ask questions!
• In your junior year: check out Summer REUs, Research Experiences for Undergraduates (all over the United States)
• Interested in math and bio research? Take Math 113 and apply to MathBioU in the summer between your junior and your senior year
Class Advertisement

- **Math H3A** – Honors Linear Algebra
- Intended for students looking for a challenge and a proof-based introduction to Linear Algebra (Math 3A)
- Prerequisite: A score of 5 on the AP Calculus BC exam (or instructor permission)
- Followed by H2D and H2E
Class Advertisement

• **Math 192** – Teaching and Learning of Secondary Math

• To get teaching experience in math, while helping underserved students in our community

• Paired with Math CEO

• 2 hours of training + 2 hours of fieldwork (teaching math) per week

• Email [apantano@uci.edu](mailto:apantano@uci.edu) if interested

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**Teaching experience + Outreach = 2 units**

Math 192 offers you a unique opportunity to:

- Learn effective pedagogical techniques
- Practice teaching middle school math, here on our campus
- Increase your engagement with UCI and the community
- Help underserved youth from Santa Ana
- Become part of a friendly community of mentors

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**Save the dates!**

**Training (@ UCI)**
- Monday 2-4pm
- Sept. 30, Oct. 7, 14, 21, 28, Nov. 4, 18, 25, Dec. 2

**Fieldwork (@ UCI)**
- Wednesday 2-4pm
- Oct. 2, 9, 16, 23, 30, Nov. 6, 13, 20, Dec. 4

**Fieldwork (@ Santa Ana)**
- Tuesday 9-10am
- Oct. 1, 8, 15, 22, 29, Nov. 5, 12, 19

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To earn 2 units, students should complete 2 hours of training and 2 hours of fieldwork (at UCI or Santa Ana) a week. Prerequisites are somewhat flexible. If you have trouble with enrollment, please email [apantano@uci.edu](mailto:apantano@uci.edu)

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“I have worked as a tutor and a teaching assistant, but I think that being a MATH CEO mentor has added valuable contribution to my goal of becoming a teacher. I get to explore working with middle school students, whose personalities and skills can be very difficult to gauge. I recommend this awesome program (flexible yet structured) to anybody who plans on working with kids at the middle school level prior to enrolling in a credential program... or even after completing the credential program.”

Resources

• Instructor and TA office hours
• Physical Sciences counseling office: https://ps.uci.edu/stuaff/
• Rowland Hall 340 Suite
• Jezelle Rabbath (younanj@uci.edu)
• FAQ: https://www.math.uci.edu/undergrad-courses/course-registration-and-placement-information
Thank You!!

• Please come up and talk to us and ask any questions you may have

• Remember to check out the Anteater Involvement Fair in Aldrich Park from 12:00-4:00pm