New Mathematics Student Orientation

Monday, September 29, 2014
Welcome UCI math majors!
Orientation Agenda

- I. Careers in Mathematics
- II. Overview of the Mathematics Department
- III. Degree Requirements
- IV. Administrative Policies and Procedures
- V. Online Resources
- VI. Tips for Success in Math Courses
- VII. Mathematics Opportunities
- VIII. Questions
Congratulations for being a math major!
Careers in Mathematics

Beyond the specific content knowledge (algebra, analysis, linear algebra, probability, computing, etc), math majors develop a variety of skills

◆ problem solving
◆ thinking logically
◆ high level quantitative and numerical skill.

This opens the doors to many careers...
Careers in Mathematics

- High School Math Teacher
- Community College or College Math Professor
- Actuary
- Quantitative Analyst
- Software Designer
- Biostatistician
- Government Lab Researcher
- Financial Analyst
- Industry Analyst/Engineer
- Education Materials Developer
- Industry Consultant
Companies Employing Mathematicians

- High Schools, Colleges, Universities
- NSA
- Government Labs
- Microsoft
- IBM
- Raytheon
- ALEKS
- Eastman Kodak
- NASA
- Aerospace Corporation
- Northrup Grumman
- Proctor and Gamble
- Theta Engineering
- Texas Instruments
- LL Bean
- Allstate Insurance
- Goldman Sachs
“Best Jobs” in 2014

Forbes published a list of the 200 best jobs for 2014. The classification is based on various factors, including

- Salary
- Potential growth
- Competiveness
- Physical demands
- Work conditions
- Amount of travel required
- Security of employment ...
Mathematician
Tenured university professor
Statistician
Actuary
Audiologist
Dental Hygienist
Software Engineer
Computer System Analyst
Occupational Therapist
Overview of the Mathematics Department
~ 40 Senate Faculty Members
~ 34 Adjunct Faculty Members

Lecturers, Instructors, Visiting Assistant Professors...

+ several postdoctoral scholars...
~ 80 Math Graduate Students

- Ph.D. in mathematics
- TAs for your courses
~ 600 Undergraduate Math Majors
Degree Requirements

- 6 tracks for your major
- ∞ mathematical possibilities
Math Major Requirements

**Lower division**

- 2A,2B – Single Variable Calculus
- 2D – Multivariable Calculus
- 2E – Multivariable Calculus (*)
- 3A – Linear Algebra
- 3D – Differential Equations
- 13 – Intro to Abstract Math
- 1 year Physics 2/7 or Chemistry 1
- 1 quarter computer programming

(*) Students in Math and Education take Math 8 instead
Upper division

- 120A – Abstract Algebra
- 121A – Linear Algebra
- 130A – Probability
- 140A,B – Real Analysis
- Plus additional classes dependent on your Concentration/Specialization

Talk with an advisor to select upper division courses appropriate to your career goals
Concentration/Specialization or (pure) math major?

- 45 Math and Finance
- 28 Math and Education
- 34 Applied Mathematics
- 4 Math and Biology
If you do not declare any concentration or specialization, then you are automatically doing the math major.
(Pure) Math Major

...is designed for students seeking both depth and breadth in their mathematical education.

- It leaves your career options after graduation wide open
- It gives you the most freedom in terms of electives
- No forms are necessary

(For graduate school, follow the honors track.)
Concentration in Mathematical Finance

...is designed for students with a strong interest in mathematics who would like to use their mathematical background to obtain a solid foundation in the fundamentals of modern economics.

Options after graduation include:
• direct employment in the business world,
• entry into an MBA program, or graduate school in math or economics.

(Students often double major in math and quantitative econ)

fill it out an application and schedule an interview with the faculty advisor after taking Econ 20A, 20B (before the end of junior year)
Specialization in Mathematical Biology

...is designed for students interested in math and computations, and applications to biological systems

For careers involving mathematical and physical modeling of biological systems

fill it out an application and schedule an interview with the faculty advisor by the end of junior year
Specialization in Applied and Computational Mathematics

...is designed for students interested in math and its applications to science/engineering

Careers: direct employment in areas of computing/engineering, master in applied math/computing/engineering, PHD in applied math

fill it out an application and schedule an interview with the faculty advisor by the end of junior year
Concentration in Math for Education/ Secondary Teaching Certification

...is designed for students wishing to earn a bachelor degree and teaching credentials (all in 4 years)

Careers: middle school and high school mathematics teachers

fill it out an application and schedule an interview with the faculty advisor by the end of sophomore year
Specialization in Math for Education

...is designed for For: Prospective Math Teachers. Choosing courses carefully, you may complete the “Math Subject Preparation Program” (SMPP) and waive the math subject exam for teachers (CSET). 1-year post-bac program needed to earn teaching credentials

Careers: middle school and high school mathematics teachers

fill it out an application and schedule an interview with the faculty advisor by the end of junior year
Honors Program

For students interested in graduate school in (pure) mathematics

Careers: academic career, research labs, NSA...

Earn distinction upon graduation by...

- completing special course requirements
- earning a high GPA
- attending an honors math seminar
- taking graduate mathematics courses.

*fill it out an application and schedule an interview with the faculty advisor by the beginning of senior year*
Your Advising Staff
Undergraduate Program Coordinator

Cathy Tokuyama
Office: Rowland Hall 340B
M–F 8AM–12PM, 1PM–5PM
Phone: 949–824–6770
Email: ctokuyam@uci.edu

- Enrollment issues
- Prerequisite Clearing
- Instructor/TA concerns
- Specialization/Concentration issues
Math Department Office

Administrative Suite:
Rowland Hall 340
(949) 824–5503

Office Hours:
M–F 8AM–12PM, 1PM–5PM

- Concentration/Specialization Applications
- Math 2A/2B Make–Up Exam Requests
- Undergraduate Petitions
PS Student Affairs
Academic Counselors
Office: Rowland Hall 134
Phone: 949–824–6507
Email: pssazot@uci.edu

- Degree requirements and course planning
- Exceeding units
- Graduation requirements
- Withdrawal, Dismissal, Readmission
- Degree Audit Issues
Enrollment Policies

ADD/CHANGE/DROP electronically (Webreg) by the end of week 2

• Waitlists

• Repeat Policies
## Enrollment continued

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- **Use WebReg. No fee applies.**
- **Enrollment Exception Request required. $3 fee applies.**
- **Enrollment Exception Request required. $3 fee applies. Withdrawal from course with "W" grade. Action unavailable.**
Always read the comments from the School of PS and the Mathematics Department on the Schedule of Classes: http://websoc.reg.uci.edu

**REPEAT STUDENTS:** If your grade was an F, enroll on September 19, as space permits. If your grade was between C- and D-, enroll on the first day of class, as space permits, via WebReg. An alternative is to retake the class in Summer Session.
Online Resources
Math Website: www.math.edu
Math Website: www.math.edu

- Office hours and locations
- Sample course syllabi
- Calculus course information
- Course offerings and descriptions
- Enrollment Policies
- Math Major resources and opportunities
Math Website: www.math.edu/undergraduate
Math Website: www.math.edu/undergraduate

- How to find research opportunities (both at UCI and off campus)
- How to find Internships
- How to prepare for graduate school
- Info on careers suitable for math majors
- Job search resources
- Info on scholarships
Tips for success, and support centers
Tips from your Advisors

- Be proactive!
- Take advantage of research opportunities
- Read EVERYTHING
- Familiarize yourself with the Catalogue
- When in doubt, ask!
Tips from your Math Professors

- Do lots of problems
- Learn to read mathematics books
- Never “cram” for math exams, you should be learning the material throughout the quarter
- Seek help early if you are confused
- Learn to read, understand, and create proofs
- Save everything (old texts and notes!)
- Try to figure out how different courses’ material are related to each other
- Pay attention to definitions
- Do lots of problems
Help for Math Courses

- Instructor Office Hours
- TA Office Hours
- Mathematics Department Tutoring Center for Math 2A and Math 2B
  - Rowland Hall 592 & 594: Drop-in tutoring
  - Starts week 2 of the quarter
- Private Tutors
- Independent Study Groups
  - Undergraduate Math Study Lounge in Rowland Hall 420
- Math 13 Study sessions
California Alliance for Minority* Participation


Objectives
* Prepare students for university life
* Retain students in the sciences via peer-to-peer mentoring
* Expose students to scientific research
* Prepare students for graduate school/corporate careers
* Increase the number of underrepresented scientists and engineers graduating from UCI.
2014 CAMP Fall Orientation and Reunion
Tuesday, October 7, 2014
5.00-7.00 pm
McDonnell Douglas Engineering Auditorium

To learn about Summer Research, Mentoring and Academic Excellence
University of California’s Leadership Excellence through Advanced Degrees

(*) For “disadvantaged” students

A great program of research and graduate school preparation for selected promising scholars interested in pursuing a PhD in STEM.
Show your passion for mathematics!!!

Become part of the mathematical community at UCI 😊

BE PROACTIVE, TAKE ADVANTAGE OF THE MANY OPPORTUNITIES FOR MATH MAJORS
Research opportunities on campus

Math199: reading course or research work, for credit (3rd and 4th yr, after taking core classes on the topic)

UROP and SURP: http://www.urop.uci.edu/

MCBU - Mathematical and Computational Biology for Undergraduates
MCBU
(Mathematical and Computational Biology for Undergraduates)

Program for undergraduates interested in mathematics applications to biology

www.math.uci.edu/~mcbu/

- **Step 1**: Take Math 113AB
- **Step 2**: Apply for paid MCBU Summer Research Experience
REU: 4 week programs focused on a single research topic under faculty guidance with small group of great students.

Most REU programs pay travel, room and board, and a stipend.
Math 194 – Problem Solving Seminar
◆ Thursdays, 7:00–8:20 pm, Fall 2014
◆ Pass/No Pass grading. 2 units credit.
◆ Everyone is welcome, whether or not you are enrolled for credit. If you like solving problems it should be fun. If you want to take the Putnam exam (and who wouldn't?) this will be good practice.

Putnam Exam
◆ Saturday, Dec. 6, 2014, 8–11 & 1–4
◆ Contact Prof. Rubin at krubin@uci.edu to sign up.
◆ http://www.math.uci.edu/~krubin/194
One talk a month.
Free pizza!
Learn about interesting mathematics outside of the classroom.
Anteaters Mathematics Club

- Club for undergraduate math enthusiasts.
- All are welcome at the weekly meetings.
- Club activities include math talks, game nights, movies, conference attendance, volunteer opportunities, math problem sessions, study groups, advising sessions, etc.

http://www.math.uci.edu/math-majors/anteater-mathematics-club
UCI CALTEACH CLUB

For students interested in a Teaching Career

1st EVENT)
Tips for Getting a Teaching Job
Wednesday, Oct. 22nd 2014
UCI Actuarial Society

Services provided:
◆ Tailored personal plan (4-year for freshman) for my actuarial career
◆ FREE access to study materials for Actuarial Exams
◆ Training sessions (mock interview, resume critics, etc) with officers
◆ Access to speaker events with actuarial firms
◆ Comprehensive network of students and alumni with a similar passion
◆ Job and Internship Opportunities

For students interested in a career as an Actuary
Pi Mu Epsilon (PME)

- Honors Society for Mathematics Majors
- UCI chapter opened in Spring 2014
- By invitation only (Junior and Seniors with high Math GPA)
Attend Mathematics Conferences

- UROP symposium
- Math Fest
- Joint Mathematical Meeting
- Local MAA conferences
- Pacific Coast Undergraduate Math Conference
- and more…
Volunteering Opportunities

- Math Counts
- High School Visits
- UCI Math Circle
- and more…
STAY TUNED!

PAY ATTENTION TO THE EMAILS FROM CATHY TOKUYAMA AND PS STUDENT AFFAIRS OFFICE ANNOUNCING THESE OPPORTUNITIES
Questions?

PLEASE Don’t be shy!!
THANK YOU!

This slide presentation will be available for your review on our Math Department website.