

Jonathan Alcaraz

EDUCATION

PhD in Mathematics

University of California, Riverside

Expected 2022

Thesis Advisor: Stefano Vidussi

M.S. in Pure Mathematics

University of California, Riverside

2018

B.S. in Pure Mathematics

University of California, Riverside

2016

TEACHING EXPERIENCE

2018-Present

Instructor

University of California, Riverside

Full responsibility for courses ranging from College Algebra to Vector Calculus. Responsibilities included writing syllabi, writing and delivering lectures, writing and grading exams, holding office hours, and supervising teaching assistants. Courses ran for 11 week terms or 5-7 week summer sessions. See full teaching history below.

2016-Present

Teaching Assistant

University of California, Riverside

Under the supervision of a primary instructor, responsibilities included leading discussion sections, administering and grading quizzes, grading exams, and holding office hours. See full teaching history below.

CONTACT

math@jonathanalcaraz.com

math.jonathanalcaraz.com

AWARDS AND FELLOWSHIPS

Dissertation Year Program Fellowship

2021-2022

Teaching Assistant Fellowship

2021-2022

Jones Junior Fellowship

2021

CNAS Diversity, Equity, and Inclusion Award

2021

Outstanding Teaching Assistant Award

2019-2020

Vernon A. Kramer Memorial Service Award

2019-2020

Chancellor's Distinguished Fellowship

2016

SKILLS

Proficiency with LaTeX

Proficiency with Google Products

Experience with C++

Experience with Linux

PROJECTS & SERVICE

PMA Graduate Student Mentor

2019-2022

Graduate student mentor and organizer for the UCR Student Chapter of the Pacific Math Alliance.

Vice-President of AMS Student Chapter

2019-2021

Vice-President of the graduate student chapter of the American Math Society at UCR. Responsible for co-organizing the UCR Math Graduate Student Seminar.

Graduate Student Ambassador

2019-2021

Volunteer position helping the UCR Math Department with recruitment of new graduate students.

Topology Qualifying Exam Prep Seminar

2019-2020

In charge of leading a seminar for graduate students who are preparing for their qualifying exam in Topology. Duties include compiling and sharing study materials, sharing and presenting solutions to practice problems, and moderating discussions regarding the material.

MathConnections Conference Co-Organizer

2019

Organized a graduate student conference at UCR in an effort bring together the math community in Southern California.

Advanced Mathematics Program

2019

Instructor for a summer program for students transitioning from lower-division to upper-division coursework meant to prepare the students for the material they would see in their Real Analysis and Group Theory courses. Duties include preparing and presenting mini-lectures, moderating discussions, compiling exercises, and being available for mentorship.

Undergraduate Research

2019

Together with another graduate student, mentored a group of undergraduates working on a research project as part of a department undergraduate research program. The project involved learning about bistellar flips of triangulations of convex hulls in Euclidean space. Duties included assigning readings, moderating discussions, being available to discuss material, and helping students prepare to present what they've learned.

Microtutorials in Mathematics

2017-2019

Participated in the creation of videos for supplemental instruction for undergraduate calculus classes, including Calculus for Life Sciences and Business Calculus. Duties include finding appropriate problems, writing scripts, and performing solutions to be recorded.

TEACHING HISTORY AS A PRIMARY INSTRUCTOR

Summer 2022

Vector Calculus I

Math 10A

Topics include Euclidean geometry, matrices and linear functions, determinants, partial derivatives, directional derivatives, Jacobians, gradients, chain rule, and Taylor's theorem for several variables.

Spring 2022

Precalculus (College Algebra for Science Majors)

Math 6B

A study of functions and their properties and graphs. Topics include exponential, logarithmic, and trigonometric functions. Also covers systems of equations and inequalities as well as sequences and series. Explores applications to the natural sciences and engineering.

Summer 2021

Vector Calculus I

Math 10A

See above.

Fall 2020

Calculus for Life Sciences I

Math 7A

Introduction to the differential calculus of functions of one variable for students majoring in Life Sciences.

Spring 2020

Precalculus (College Algebra for Science Majors)

Math 6B

See above.

Summer 2018

Precalculus (College Algebra for Science Majors)

Math 6B

See above.

TEACHING HISTORY AS A TA

Fall 2021

Geometry

Math 133

Spring 2021

Introduction to Topology

Math 145B

Introduction to Discrete Structures

Math 11

Winter 2021

Introduction to Probability and Statistics

Math 149B

Summer 2020

Calculus for the Life Sciences I

Math 7A

Precalculus

Math 5

Winter 2020

Introduction to Discrete Structures

Math 11

Intermediate Analysis

Math 150A

Fall 2019

Multivariable Calculus

Math 10A

Introduction to Set Theory

Math 144

Spring 2019

Topology

Math 145B

Winter 2019

Topology

Math 145A

First-Year Calculus

Math 9A

Fall 2018

Calculus for Life Science Majors

Math 7B

First-Year Calculus

Math 9C

Spring 2018

First-Year Calculus

Math 9C

Multivariable Calculus

Math 10A

Winter 2018

College Algebra

Math 4

First-Year Calculus

Math 9B

Fall 2017

First-Year Calculus

Math 9C

Spring 2017

College Algebra

Math 4

First-Year Calculus

Math 9C

Winter 2017

College Algebra

Math 4

First-Year Calculus

Math 9A

Fall 2016

College Algebra

Math 4

TALKS

2021

Surface Bundles and Group Extensions

30 April

Underrepresented Students in Topology and Algebra Research Symposium
(USTARS)

2020

An Introduction to Interval Bundles

10 January

UCR Graduate Student Seminar

2019

Fibering Rigidity of the Atiyah-Kodaira Bundle

6 November

UCR Topology Seminar

The Bigon Criterion

9 July

MSRI: Geometric Group Theory @ CMO

Constructing Atiyah-Kodaira Fibrations

23 May

UCR Topology Seminar

Your Daily Recommended Serving of Fiber Bundles

8 March

UCR Graduate Student Seminar

The Mapping Class Groups of Some Surfaces

21 February

UCR Topology Seminar

An Introduction to Surfaces, Fiber Bundles, and Other Words

14 February

UCR Topology Seminar

2018

Bigon Criterion

1 November

UCR Topology Seminar

Intersection Numbers of Simple Closed Curves on Surfaces

25 October

UCR Topology Seminar

Constructing Arithmetic Hyperbolic Surfaces

1 June

UCR Graduate Student Seminar

CONFERENCES & WORKSHOPS

2020

Topology Students Workshop

July

Hosted Virtually by Georgia Tech

Joint Mathematics Meeting

January

Colorado Convention Center

2019

Math Alliance: Field of Dreams

November

Renaissance St. Louis Airport Hotel

Cascade Topology Seminar

September

University of Manitoba

MSRI: Geometric Group Theory

July

Casa Matemática Oaxaca (CMO)

LG&TBQ

June

University of Wisconsin

GSCAGT

June

Temple University

MathConnections

May

UC Riverside

Redbud Topology Conference

April

University of Oklahoma

Graduate School on the Geometry of Teichmüller Spaces

April

SCGP at Stony Brook University

2018

MathConnections

May

UC Riverside

Joint Mathematics Meeting

January

San Diego Convention Center

2017

AMS Fall Western Sectional

November

UC Riverside

MathConnections

May

UC Riverside

MAA SoCal-Nev Section Meeting

April

Cal State Northridge