Mathematical Sciences at CMC

Lenny Fukshansky
Associate Professor and Chair
Department of Mathematical Sciences
Claremont McKenna College
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- 10 tenured and tenure-track faculty: 9 in math, 1 in computer science
- 4 visiting faculty members: 3 in math, 1 in computer science
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Our faculty members are talented and devoted teachers, as well as top researchers in their fields of specialization.
Programs of study

CMC Department of Mathematical Sciences offers the following programs of study:

- **Pure Mathematics major track**: aimed towards future graduate studies in mathematics; sample careers – math professor, mathematician working for the government.

- **Applied Mathematics major track**: aimed towards future graduate studies in applied mathematics, statistics, or related field, as well as a variety of analytic career options; sample careers – applied mathematician (in academia, government, or industry), statistical analyst, financial analyst, actuary.

- **General Mathematics major track**: provides a broad overview of mathematics for people with intellectual curiosity; sample careers – lawyer, school teacher.

- **Sequence in Computer Science**: provides a solid introduction to the subject, which can complement any major at CMC. A CS major is also possible with additional courses at Pomona and HMC.
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- **Elective courses**: for example Number Theory (MATH 175), Algebraic Topology (MATH 144), Discrete Geometry (MATH 149), Statistical Inference (MATH 152), Stochastic Processes (MATH 156), Monte Carlo Methods (MATH 160), etc.
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Each major track consists of 7 core courses and 4 elective courses. A **dual major** option consists of 7 core courses and 2 elective courses, so 9 total.
Our courses

Our department offers a wide range of courses. CMC has a GE requirement of at least 1 course from the Department of Mathematical Sciences. Any math or CS course that we offer can be used to satisfy this requirement.

• Lower division math courses:

• Upper division math courses:

• CS courses:
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Undergraduate research opportunities

In addition to the extensive course offerings, we offer our students a variety of opportunities for undergraduate research under the supervision of our faculty.

- Individual research projects: a student works one-on-one with a faculty member on a research project of mutual interest; this may include, but is not limited to, the student’s senior thesis project (a senior thesis project may consist of original research or exposition and may be a semester or a year long).
- Group research projects: a student works in a team of several students on a research project under the supervision of a faculty member, for instance our recent NSF-funded REU (Research Experience for Undergraduates) program and Fletcher Jones Foundation-funded Fellowship program.
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Faculty research specialties

Our faculty represent a wide range of mathematical research disciplines, including:

- Abstract Algebra
- Algebraic Topology, Knot Theory, Low Dimensional Topology
- Combinatorics
- Real Analysis, Complex Analysis, Functional Analysis, Harmonic Analysis
- Probability, Statistics
- Number Theory, Discrete Geometry
- Compressive Sensing
- Numerical Analysis, Partial Differential Equations
- Computer Systems, Databases, Programming Languages
Claremont Center for Mathematical Sciences

Math and CS courses and programs at the Claremont Colleges are a cooperative effort of 6 math departments, as well CMC, Pomona, and HMC computer scientists (Pomona and HMC have separate CS departments). In particular, all the math departments are united under the auspices of the CCMS, the Claremont Center for Mathematical Sciences.
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- Claremont Colleges maintain a world-class mathematics library collection.
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Math and CS education is among the most valuable in today’s world, offering a large variety of career options. Strong analytical skills are critical in a great number of industrial fields.
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- According to a study by the US Department of Education, the single best predictor of a person’s total lifetime potential income is the number of math courses they took in college.
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- Unlike Pomona or HMC, we offer a certain degree of flexibility stemming from the dual major option.
Some recent outcomes

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