

Applied mathematics

Did You Know?

CU students have excelled in the international Mathematical Contest in Modeling, which challenges student teams to solve complex, open-ended problems in a 96-hour marathon competition.

Students:

97 undergraduates
66 graduate students

Faculty:

22 faculty,
plus 44 affiliated faculty
from other departments

Rankings:

CU-Boulder is the only doctoral university in the Rocky Mountain region ranked in the top 20 public engineering programs in the nation. CU's graduate program in Applied Math is ranked 22nd in the nation among public universities. (USNWR)

Colorado
University of Colorado at Boulder



Do you love solving challenging problems through careful, step-by-step, logical analysis? Applied mathematics might be the major for you! As an applied math student, you will study mathematics together with an area of application from engineering, the natural sciences, or quantitative finance. Regardless of the career path you choose, the ability to define and formulate problems, find solutions, and communicate your results is critical.

At CU, the applied math curriculum will prepare you to meet these diverse challenges. Our graduates are very successful in the job market, and our undergraduate major provides excellent preparation for graduate programs in engineering, science, business, and medicine.

"I want to go into a field that's really competitive. The energy and encouragement of my Applied Math faculty advisor have helped me find creative ways to meet my goals. With her help and my involvement in the Society of Women Engineers, I now have a job on Wall Street when I graduate."

— Julia Whippo

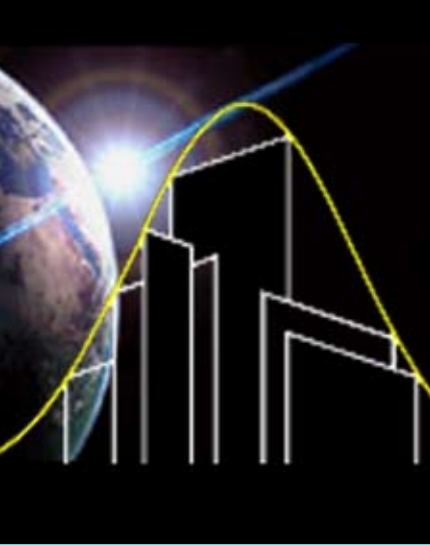
Applied Math faculty and students developed the Mathematical Visualization Toolkit, an award-winning online instructional tool for graphing and illustrating mathematical concepts.

Hands-on Learning

At CU, students learn by doing. The Department of Applied Math offers a broad range of undergraduate research opportunities funded by NSF grants. Research areas include computational mathematics, probability and statistics, nonlinear phenomena, mathematical biology, and physical applied math.

What can I do with a degree in applied mathematics?

- Analysis, modeling and design related to the spread of disease, weather prediction, medical imaging, or manufacturing
- Evaluate and minimize risk as an actuary
- Work in communications, education, finance, defense, consulting, etc.



Applied Math curriculum

128 semester credit hours required

(Sample Curriculum)

FRESHMAN YEAR

Fall Semester

APPM 1350 Calculus 1 for Engineers	4
CHEN 1211 Engr. General Chemistry	3
CHEM 1221 Engr. General Chemistry Lab	2
CSCI 1300 Computer Science 1	4
OR GEEN 1300 Intro to Engr Computing	3
Humanities and Social Science Elective	3

Spring Semester

APPM 1360 Calculus 2 for Engrs	4
PHYS 1110 General Physics 1	4
Elective(s)	3-5
Humanities and Social Science Elective	3

SOPHOMORE YEAR

Fall Semester

APPM 2350 Calculus 3 for Engrs	4
APPM 2450 Calculus 3 Lab	1
PHYS 1120 General Physics 2	4
PHYS 1140 Experimental Physics	1
Humanities and Social Science Elective	3
Technical Electives	3-6

Spring Semester

APPM 2360 Diff Eq with Linear Algebra	4
APPM 2460 Diff Equations Lab	1
APPM 3310 Matrix Methods	3
Humanities and Social Science Elective	3
Technical Electives	4-7

JUNIOR YEAR

Fall Semester

APPM 4350 PDE's/Fourier Series	3
MATH 3000, 3140, 3200 or 4310	3
WRTG 3030 Writing on Science & Society	3
Technical Electives	6-9

Spring Semester

APPM 3XXX	3
APPM 4360 Complex Variables	3
Technical Electives	6-9
Humanities and Social Science Elective	3

SENIOR YEAR

Fall Semester

APPM 4650 Int Num Analysis 1	3
APPM 4XXX	3
Technical Electives	6
Electives	3-6

Spring Semester

APPM 4660 Int Num Analy 2	3
(or senior sequence)	
APPM 4XXX	3
Technical Electives	6
Electives	3-6

Applied math students can participate in research projects in:

Mathematical biology

Computational linear algebra

Search engines

High-dimensional data analysis

Numerical analysis including fast algorithms

Visualization and computer graphics

Fluid dynamics

Dynamical systems and chaos theory

Mathematical physics

For more information visit: <http://amath.colorado.edu>

