APPLIED AND COMPUTATIONAL MATHEMATICS

This major is designed to give students an understanding of essential areas used in the application of mathematics. It allows students to use upper-division electives to prepare themselves for specific career options, including work with technological firms, the insurance industry, government services, or financial/investment institutions. Courses are offered in many areas and are taught by a faculty of research mathematicians.

BACHELOR OF ARTS (BA) GENERAL OVERVIEW

Five lower-division mathematics courses:

- **Three lower-division Calculus courses**
- **One lower-division Linear Algebra and Linear Differential Equations course**
- **One lower division Mathematical Reasoning and Problem Solving course**

One computing course. Examples include:

- **Fundamentals of Computer Programming**
- **Introduction to Java Programming**
- **Introduction to C Programming**

Four upper-division mathematics courses. Examples include:

- **Theory of Numbers**
- **Vector Analysis and Introduction to Differential Geometry**
- **Mathematics of Physics and Engineering II**
- **Theory and Computational Methods for Optimization**

Two upper-division core courses:

- **Probability Theory**
- **Numerical Methods**

Three quantitative elective courses:

- **Three additional quantitative courses approved by the mathematics department; one must be an upper-division course**

Additional Bachelor of Science (BS) requirements:

- **Mathematical Statistics**
- **Fundamental Concepts of Analysis A**
- **One additional quantitative elective course outside mathematics**
- **One fewer upper-division Mathematics elective than the BA**

ACADEMIC OPPORTUNITIES

William Lowell Putnam Competition: An annual contest for college students that gives teams the opportunity to win up to $25,000.

Pi Mu Epsilon: This undergraduate math honor society focuses on contest problem solving as well as mathematical games and puzzles. Students have participated in the William Lowell Putnam competition and the National Science Foundation-funded Research Experience for Undergraduates.

Study Abroad: Spend one or two semesters abroad at noted universities in a variety of locations, including the United Kingdom, Australia, South Korea, or South Africa

For additional information, please consult the USC Catalogue.

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