LaGrange College Course Catalog - Computational Mathematics

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Computational Mathematics - B.S. in Mathematics with a Concentration in Computational Mathematics

Type: Major

The B.S. in Mathematics with a concentration in Computational Mathematics helps prepare mathematics majors to meet the demands of ever-changing scientific computation in their future postgraduate work, whether in industry or academia. This degree requires a minimum of 61 semester hours, as follows:

MATH 1114 Introduction to Statistics (3)
MATH 2221 Analytic Geometry and Calculus I (4)
MATH 2222 Analytic Geometry and Calculus II (4)
MATH 2223 Analytic Geometry and Calculus III (4)
MATH 2224 Differential Equations (3)
MATH 2241 Programming for the Sciences (4)
MATH 3092 Informatics/Data Mining (3)
MATH 3185 Mathematical Modeling (3)
MATH 3316 Probability Theory (3)
MATH 3335 Linear Algebra (3)
MATH 3380 Discrete Mathematics (3)* OR MATH 3382 Combinatorial Design Theory (3)*

MATH 4323 Complex Variables (3)
MATH 4333 Modern Algebra I (3)
MATH 4343 Analysis I (3)
MATH 4410 Numerical Analysis I (3)
MATH 4350 Senior Capstone (3)

An additional MATH course, as approved by advisor and department chair (3)

An additional 3000 or 4000-level MATH course, as approved by advisor and department chair (3)

**One of these courses must be taken.* PHYS 2121 and 2122 are also recommended.

Minor in Computational Mathematics - Minor in Computational Mathematics

Type: Minor

The Computational Mathematics minor gives students not majoring in Mathematics the opportunity to explore tools and techniques that might enhance their quantitative research endeavors. In short, the Computational Mathematics minor should allow students from areas outside Mathematics and Computer Science to be able to effectively collect and analyze data in their respective fields. Courses required for a Computational Mathematics minor are

- MATH 2221 Calculus I (4)
- MATH 2241 Programming for the Sciences (4)
- MATH 3092 Informatics/Data Mining (3)
- MATH 3185 Mathematical Modeling (3)
- An additional 2000-, 3000-, or 4000-level MATH course, as approved by advisor and department chair (6)

Total: 20 semester hours

Students seeking a minor in Computational Mathematics are encouraged to seek a Summer or Interim-term internship position in programs related to their majors that utilizes computational techniques. Students who are interested in graduate school could alternately consider attending a computational Research Experience for Undergraduates (REU), which is a National Science Foundation program offered at institutions throughout the country in a variety of science fields. Alternatively, these students may wish to engage in an undergraduate research project focused on computational applications in their field of interest, which may be jointly supervised by a research advisor from the student’s field and by a faculty member of the Department of Mathematics.

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