Applied Mathematics Concentration

CSC/CPE 101  Fundamentals of Computer Science I  4
MATH 304  Vector Analysis  4
MATH 344  Linear Analysis II  4
MATH 350  Mathematical Software  4
or CSC/CPE 102  Fundamentals of Computer Science II
MATH 413  Introduction to Analysis II  4
MATH 451  Numerical Analysis I  4
STAT 301  Statistics I  4
or STAT 305  Introduction to Probability and Simulation
or STAT 425  Probability Theory

Choose two tracks from the following list. A track consists of two paired courses representing depth of study with a particular focus.

- MATH 408 & MATH 409  Complex Analysis I and Complex Analysis II
- MATH 416 & MATH 418  Differential Equations II and Partial Differential Equations
- MATH 452 & MATH 453  Numerical Analysis II and Numerical Optimization

Approved Electives

Select one of the following categories, with at least one course at the 300 level or above.

Category 1:
- ASTR 301  The Solar System
- ASTR 302  Stars and Galaxies
- ASTR 326  Cosmology
- PHYS 132  General Physics II
or PHYS 133  General Physics III
- PHYS 211  Modern Physics I
- PHYS 301  Thermal Physics I
- PHYS 302  Classical Mechanics I
- PHYS 303  Classical Mechanics II
- PHYS 317  Special Theory Relativity
- PHYS 322  Vibrations and Waves
- PHYS 323  Optics
- PHYS 405  Quantum Mechanics I
- PHYS 408  Electromagnetic Fields and Waves I
- PHYS 412  Solid State Physics
- PHYS 417  Nonlinear Dynamical Systems

Category 2:
- STAT 302  Statistics II
- STAT 305  Introduction to Probability and Simulation
- STAT 323  Design and Analysis of Experiments I
- STAT 324  Applied Regression Analysis
- STAT 330  Statistical Computing with SAS
- STAT 331  Statistical Computing with R
- STAT 416  Statistical Analysis of Time Series
- STAT 417  Survival Analysis Methods
- STAT 418  Analysis of Cross-Classified Data
- STAT 419  Applied Multivariate Statistics
- STAT 421  Survey Sampling and Methodology
- STAT 423  Design and Analysis of Experiments II
- STAT 425  Probability Theory
- STAT 426  Estimation and Sampling Theory
- STAT 427  Mathematical Statistics

Category 3:
- CSC/CPE 102  Fundamentals of Computer Science II
- CSC/CPE 103  Fundamentals of Computer Science III
- CSC/CPE 225  Introduction to Computer Organization
- CSC/CPE 349  Design and Analysis of Algorithms
- CSC/CPE 357  Systems Programming
- CSC/CPE 448  Bioinformatics Algorithms

Category 4:
- ME 211  Engineering Statics
- ME 212  Engineering Dynamics
- ME 302  Thermodynamics I
- ME 326  Intermediate Dynamics
- ME 341  Fluid Mechanics I

Category 5:
- ECON 311  Intermediate Microeconomics I
- ECON 313  Intermediate Macroeconomics
- ECON 408  Mathematical Economics

Total units: 56

Consultation with advisor is recommended prior to selecting approved electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

Other choices are also possible, and should be pre-approved in consultation with academic advisor. Approved electives are to be taken outside of the Mathematics department and should have significant applications to mathematics.