Math Major with Pure Track Requirements
Catalog Year: 2015-16
Degree: Bachelor of Science
Credit Hours: 46+

“PR” indicates a pre-requisite. “CO” indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult http://registrar.cofc.edu/general-edu for more information.

Required Courses

☐ MATH 120 Introductory Calculus (4) PR: Placement or C- or better in MATH 111
☐ MATH 203 Linear Algebra (3) PR: MATH 120 or instructor permission
☐ MATH 220 Calculus II (4) PR: MATH 120 or HONS 115
☐ MATH 221 Calculus III (4) PR: MATH 220

Select one of the following tracks (Actuarial, Applied, Pure, or Statistics):

Pure Track

☐ MATH 295 Introduction to Abstract Mathematics (3) PR: MATH 203 or MATH 221
☐ MATH 303 Abstract Algebra I (3) PR: MATH 203 and MATH 295
☐ MATH 311 Advanced Calculus I (3) PR: MATH 221 and MATH 295
☐ MATH 315 Introduction to Complex Variables (3) PR: MATH 221 with a grade of C or better
☐ MATH 323 Differential Equations (3) PR: MATH 221, and MATH 203 or instructor permission
☐ MATH 340 Axiomatic Geometry (3) PR: MATH 295 or instructor permission

Select one of the following course/lab pairings:

☐ ____________  ☐ ____________  lab

CSCI 220  Computer Programming I (3) PR: CSCI 120 or CSCI 180 or MATH 111 or higher or department permission
CSCI 220L  Computer Programming I Lab (1) PR or CO: CSCI 220

OR

MATH 245  Numerical Methods and Mathematical Computing (3) PR: MATH 203 or MATH 220 or instructor permission; CO: MATH 246
MATH 246  Mathematical Computing and Programming Lab (1) PR: MATH 220 or instructor permission

Select one of the following courses:

☐ ____________

MATH 403  Abstract Algebra II (3) PR: MATH 303
MATH 411  Advanced Calculus II (3) PR: MATH 203 and MATH 311

Select 6 credit hours from the following 400-level MATH courses:

☐ ____________  ☐ ____________

MATH 401  Intro Point Set Topology (3) PR: MATH 311
MATH 402  Advanced Linear Algebra (3) PR: MATH 203, and MATH 303 and/or MATH 311
MATH 403  Abstract Algebra II (3) PR: MATH 303
MATH 411  Advanced Calculus II (3) PR: MATH 203 and MATH 311
MATH 415  Complex Analysis (3) PR: MATH 311
MATH 417  Reading and Research (1-3) PR: Senior standing; instructor and department chair permission
MATH 418  Reading and Research (1-3) PR: Senior standing; instructor and department chair permission
MATH 421  Vector and Tensor Analysis (3) PR: MATH 311
MATH 423  Introduction to Partial Differential Equations (3) PR: MATH 221 and MATH 323
MATH 430  Mathematical Statistics I (3) PR: MATH 221
MATH 431  Mathematical Statistics II (3) PR: MATH 430
MATH 440  Statistical Learning I (3) PR: MATH 203 and MATH 220 and MATH 350
MATH 441  Statistical Learning II (3) PR: MATH 440
MATH 445  Numerical Analysis (3) PR: MATH 203 and MATH 245 and MATH 323
MATH 449  Linear Models (3) PR: MATH 203 and MATH 350
MATH 451  Linear Programming and Optimization (3) PR: MATH 203 and MATH 221, and CSCI 220 or MATH 245, or instructor permission
MATH 452  Operations Research (3) PR: MATH 203 and MATH 430, and CSCI 220 or MATH 245
MATH 455  Bayesian Statistical Methods (3) PR: MATH 430
MATH 460  Stochastic Processes (3) PR: MATH 430
MATH 461  Time Series (3) PR: MATH 430
MATH 470  Mathematical Modeling (3) PR: MATH 203 and MATH 232, and MATH 246 or CSCI 220, or instructor permission
MATH 475  Statistical Consulting (3) PR: MATH 350 and one of the following: MATH 440, MATH 441, MATH 451, MATH 452, or CSCI 334
MATH 480  Topics in Applied Mathematics (3; repeatable) PR: Instructor permission
MATH 485  Topics in Pure Mathematics (3) PR: Instructor permission
MATH 490  Practicum in Mathematics (3) PR: Senior standing; instructor and department chair permission
MATH 495  Capstone in Mathematics (3) PR: Completion of other core courses and senior standing or permission of the department
MATH 499  Bachelor's Essay (3) PR: Instructor and department chair permission