

### Interdisciplinary Concentration

This concentration requires a minor or second major in statistics, economics, physics, finance, any SEAS department, or another approved discipline in which mathematics is heavily used. Planned minor/second major: \_\_\_\_\_

#### Required Basic and Intermediate Courses

| course  | prerequisites       | offered   | Fall | Spr. | Fall | Spr. | Fall | Spr. | Fall | Spr. |
|---|---------------------|-----------|------|------|------|------|------|------|------|------|
| 1231 Calculus I (or 1221)                         |                     | F, S, Smr |      |      |      |      |      |      |      |      |
| 1232 Calculus II                                  | 1231 or 1221        | F, S, Smr |      |      |      |      |      |      |      |      |
| 2233 Multivariable Calculus                       | 1232                | F, S, Smr |      |      |      |      |      |      |      |      |
| Computer Programming Course (CSCI) †              |                     |           |      |      |      |      |      |      |      |      |
| 2971 Intro. to Mathematical Reasoning             | 1232                | F, S      |      |      |      |      |      |      |      |      |
| <b>For BA:</b> 2184 Linear Algebra I or ‡         | 1231 or 1221        | F, S, Smr |      |      |      |      |      |      |      |      |
| 2185 Comp. Intro. Linear Algebra                  | 1231/21 & 2971 (co) | F, S      |      |      |      |      |      |      |      |      |
| <b>For BS:</b> 2185 Comp. Intro. Linear Algebra ‡ | 1231/21 & 2971 (co) | F, S      |      |      |      |      |      |      |      |      |

† Options: CSCI 1011, Java; *CSCI 1012, Python (best)*; 1041, FORTRAN; 1111, Software Development; 1121, C; 1131, C.

‡ Credit may not be earned for both Math 2184 and 2185. Math 2185 is required for the BS and preferred for the BA.

#### Required Advanced Courses

| course                               | prerequisites      | offered | Fall | Spr. | Fall | Spr. | Fall | Spr. | Fall | Spr. |
|--------------------------------------|--------------------|---------|------|------|------|------|------|------|------|------|
| 3342 Ordinary Differential Equations | 2184/85 & 2233     | F (Smr) |      |      |      |      |      |      |      |      |
| 3359 Mathematical Modeling           | 3342 & CSCI        | S       |      |      |      |      |      |      |      |      |
| 3553 Numerical Analysis              | 2184/5, 2233, CSCI | F       |      |      |      |      |      |      |      |      |

#### Electives (four for BA, six for BS\*)

| course                              | prerequisites         | offered | Fall | Spr. | Fall | Spr. | Fall | Spr. | Fall | Spr. |
|-------------------------------------|-----------------------|---------|------|------|------|------|------|------|------|------|
| 3120 Elementary Number Theory       | 2971                  | S even  |      |      |      |      |      |      |      |      |
| 3125 Linear Algebra II              | 2184/85 & 2971        | S odd   |      |      |      |      |      |      |      |      |
| 3257 Complex Variables              | 2184/85, 2233, 2971   | F even  |      |      |      |      |      |      |      |      |
| 3343 Partial Differential Equations | 3342                  | S       |      |      |      |      |      |      |      |      |
| 3410 Mathematics of Finance         | 2233                  | F       |      |      |      |      |      |      |      |      |
| 3411 Stochastic Methods in Finance  | 2184/85 & 3410        | S       |      |      |      |      |      |      |      |      |
| 3613 Combinatorics                  | 2971                  | F odd   |      |      |      |      |      |      |      |      |
| 3632 Graph Theory                   | 2971                  | S odd   |      |      |      |      |      |      |      |      |
| 3710 Mathematical Logic             | 2971                  | F even  |      |      |      |      |      |      |      |      |
| 3720 Axiomatic Set Theory           | 2971                  | F odd   |      |      |      |      |      |      |      |      |
| 3730 Computability Theory           | 2971                  |         |      |      |      |      |      |      |      |      |
| 3740 Computational Complexity       | 2971                  |         |      |      |      |      |      |      |      |      |
| 3806 Topology                       | 2971                  | F even  |      |      |      |      |      |      |      |      |
| 3848 Differential Geometry          | 2184/85, 2233, & 2971 | S even  |      |      |      |      |      |      |      |      |
| 4121 Abstract Algebra I             | 2184/85 & 2971        | F       |      |      |      |      |      |      |      |      |
| 4122 Abstract Algebra II            | 4121                  | S even  |      |      |      |      |      |      |      |      |
| 4239 Real Analysis I                | 1232 & 2971           | F (Smr) |      |      |      |      |      |      |      |      |
| 4240 Real Analysis II               | 2184/85, 2233, & 4239 | S       |      |      |      |      |      |      |      |      |
| 4981 Seminar: Topics in Mathematics | 2184/85 and 2233      | S       |      |      |      |      |      |      |      |      |
| 4995 Reading and Research           |                       |         |      |      |      |      |      |      |      |      |

\* For students who complete the BS requirements for a major in astronomy and astrophysics, biology, biophysics, chemistry, data science, economics, physics, statistics, finance, information systems, or any major in SEAS, this requirement is reduced to four electives.