## Pure Concentration

### 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 | | | | | | | | |
| 2185 Linear Algebra I for Majors **or** ‡ | 1231/21 & 2971 (co) | F, S | | | | | | | | |
| (2184 Linear Algebra I ***along with*** | 1231 or 1221 | F, S, Smr | | | | | | | | |
| 3125 Linear Algebra II) | 2184/85 & 2971 | S odd | | | | | | | | |

† Options: CSCI 1011, Java; 1041, FORTRAN; 1111, Software Development; 1121, C; 1131, C.
May be replaced by an additional 3000–4000 elective.
‡ Credit may not be earned for both Math 2184 and 2185.
If 2184–3125 is taken, then 3125 also counts toward the required advanced courses or electives.

### Required Advanced Courses

| course | prerequisites | offered | Fall | Spr. | Fall | Spr. | Fall | Spr. | Fall | Spr. |
|---|---|---|---|---|---|---|---|---|---|---|
| 4121 Intro Abstract Algebra I | 2184/85 & 2971 | F | | | | | | | | |
| 4239 Real Analysis I | 1232 & 2971 | F (Smr) | | | | | | | | |
| 4240 Real Analysis II | 2184/85, 2233, & 4239 | S | | | | | | | | |
| 3125 Linear Algebra II **or** | 2184/85 & 2971 | S odd | | | | | | | | |
| 4122 Intro Abstract Algebra II | 4121 | S even | | | | | | | | |

### **Electives** (three for BA, five 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 | | | | | | | | |
| 3342 Ordinary Differential Equations | 2233 & 2184/85 | F (Smr) | | | | | | | | |
| 3343 Partial Differential Equations | 3342 | S | | | | | | | | |
| 3359 Mathematical Modeling | 3342 & CSCI | S | | | | | | | | |
| 3410 Mathematics of Finance | 2233 & 2971 | F | | | | | | | | |
| 3411 Stochastic Methods in Finance | 2184/85 & 3410 | S | | | | | | | | |
| 3553 Numerical Analysis | 2184/5, 2233, CSCI | F | | | | | | | | |
| 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 | | | | | | | | |
| 4122 Abstract Algebra II | 4121 | S even | | | | | | | | |
| 4981 Seminar: Topics in Mathematics | 2184/85 and 2233 | S | | | | | | | | |
| 4995 Reading and Research | | | | | | | | | | |