**Mathematics Major (math\_ba\_01):**

**Applied Mathematics Specialization (math\_sub01)**

**BA degree – 32 Course Units**

**Note**: The complete list of graduation and retention requirements, including grade requirements, can be found in the Undergraduate Bulletin and on the department website.

**Major Course Requirements**

Fulfill via completion of course requirements in three categories

|  |  |  |
| --- | --- | --- |
| **Core Courses**  (8 courses, 7 course units) | **Major Options or Specialization Courses**  (6 courses) | **Correlate Courses**  (3 courses) |
| MAT 099 – Orientation to Mathematics (zero course  units) | Applied Math Option Course: MAT 300 or 400 level course on Applied Math Option list | Science Course\*\* |
| MAT 128 – Calculus B | Applied Math Option Course: MAT 300 or 400 level course on Applied Math Option list | Science Course\*\* |
| MAT 200 – Proof Writing through Discrete  Mathematics | Applied Math Option Course: MAT 400 level course on Applied Math Option list | CSC 220 and CSC 230; or with permission, CSC 250 |
| MAT 205 – Linear Algebra: Theory & Applications | MAT/STA Option (not on Applied Math Option list): MAT/STA 300 or 400 level |  |
| MAT 229 – Multivariable Calculus | MAT/STA Option: MAT/STA 300 or 400 level course | \*\*Choose any two natural science courses from list of course appearing on the Applied Mathematics List (see the department website for the list). Both must have a lab. |
| MAT 310 – Real Analysis | MAT/STA Option: MAT/STA 300 or 400 level course |
| MAT 326 – Differential Equations |  |  |
| MAT 498 – Capstone Experience |  |  |

**Liberal Learning Requirements**

Fulfill via completing course requirements in one of four options:

**Option 1 – Breadth Distribution from Approved List**

|  |  |  |
| --- | --- | --- |
| **Arts & Humanities**  (3 courses) | **Social Science & History**  (3 courses) | **Natural Sciences & Quantitative Reasoning** (3) |
| Literary, Visual, or Performing Arts course | Behavioral, Social, or Cultural Perspectives course | Natural Science course (see above) |
| World Views/Ways of Knowing course | Social Changes in Historical Perspective course | Natural Science course (see above) |
| Literary, Visual, or Performing Arts course  or  World Views/Ways of Knowing course | Behavioral, Social, or Cultural Perspectives course \  Or Social Changes in Historical Perspective course | Quantitative Reasoning course  MAT 127 – Calculus A |

**Option 2 – Designated Interdisciplinary Concentration (**see www.tcnj.edu/~liberal/concentrations/index.html**)**

**Option 3– Self-designed Interdisciplinary Concentration (**see www.tcnj.edu/~liberal/concentrations/index.html**)**

**Option 4 – Second Major**

**Civic Responsibilities, Proficiencies & Electives**

Fulfill via completion of course requirements in three categories

|  |  |  |
| --- | --- | --- |
| **Civic Responsibilities** | **Intellectual & Scholarly Growth** | **Electives** (6 or as needed to fulfill 32 course unit graduation requirement) |
| IDS 103 – Community Engaged Learning (*zero-credit requirement*) | IDS 102 – Information Literacy online tutorial (*zero-credit requirement*) | Elective course |
| **Concepts** – *(fulfilled through liberal learning, other courses, or sustained experience)* | **(WRI 101 or 102 may be required freshmen year)** | Elective course |
| Gender | **Writing Intensive Courses:** | Elective course |
| Global Perspective | FSP First Seminar course  (*satisfies one liberal learning requirement)* | Elective course |
| Race & Ethnicity | Mid-level course | Elective course |
|  | Capstone course *(fulfilled by MAT 498)* | Elective course |
|  | **Second Language** (0-3)  Demonstrated proficiency at the low intermediate level (*based on placement*). |  |
|  |  |