Requirements for the Mathematics Major

- MAT 1000: Mathematical Communities
- MAT 1500, 1505, 2500: Calculus I, II, and III – AP credit can help here.
- MAT 2600: Foundations of Mathematics
- MAT 2705: Differential Equations and Linear Algebra
- MAT 3300: Advanced Calculus
- MAT 3400: Linear Algebra
- MAT 3500: Modern Algebra
- MAT 5900: Seminar in Mathematics
- Four mathematics electives (like Statistical Methods, Financial Derivatives, or Coding Theory)
- One approved upper-level analysis course
- A two-semester natural science sequence with a lab like the Physics sequence – AP credit can help here.
- One more science elective like CSC 1051: Algorithms and Data Structures I
- Courses to fulfill the core requirements for the college – AP credit can help with the foreign language requirement.
- Enough free electives to meet the university requirement for credit hours – AP credit can help here.

Requirements for the Statistics Major

- MAT 1500, 1505, 2500: Calculus I, II, and III – AP credit can help here.
- MAT 2705: Differential Equations and Linear Algebra or MAT 3100: Applied Linear Algebra
- MAT 4310: Statistical Methods
- MAT 4315: Applied Statistical Models
- MAT 4380: Data Science
- MAT 5700: Mathematical Statistics I
- MAT 5705: Mathematical Statistics II
- MAT 5905: Seminar in Statistics
- Three statistics electives (like Design of Experiments, Data Mining, or Bayesian Data Analysis)
- Two natural science courses with labs at the science major level – AP credit can help here.
- CSC 1051: Algorithms and Data Structures I
- Courses to fulfill the core requirements for the college – AP credit can help with the foreign language requirement.
- Enough free electives to meet the university requirement for credit hours – AP credit can help here.
- Note: Available starting in Fall 2020. Come to Villanova as a Mathematics major and then switch.
AP Credit in Mathematics and Statistics

<table>
<thead>
<tr>
<th>Advanced Placement</th>
<th>Score of 3</th>
<th>Score of 4 or 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject-Test Number</td>
<td>Courses</td>
<td>Credits</td>
</tr>
<tr>
<td>Calculus AB (66) or Calculus Subgrade (69)</td>
<td></td>
<td>MAT 1500</td>
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<tr>
<td>Calculus BC (68)</td>
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<td>MAT 1500</td>
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<td>MAT 1505</td>
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<tr>
<td>Statistics (90)</td>
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<td>MAT 1230 or CSC 2300</td>
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</tbody>
</table>

The Core Curriculum for Math/Stat Majors

- Augustine and Culture Seminar (2 courses)
- Ethics (1 course)
- Fine Arts (1 course)
- Foreign Language (0 to 4 courses) – AP credit can help.
- History (1 course)
- Core Literature and Writing (1 course)
- Philosophy (1 course)
- Theology and Religious Studies (2 courses)
- Social Sciences (2 courses)
- Diversity Requirement (two different types)