**COLLEGE of ARTS & SCIENCES**

**Language Requirement**

All students who major in the College of Arts & Sciences are required to demonstrate competence in a second language. For complete details: https://www.gonzaga.edu/college-of-arts-sciences/about/information-for-students/language-requirement-information

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### LOWER DIVISION

<table>
<thead>
<tr>
<th>Course</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 157</td>
<td>Calculus &amp; Analytic Geometry I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 258</td>
<td>Calculus &amp; Analytic Geometry II</td>
<td>4</td>
</tr>
<tr>
<td>MATH 259</td>
<td>Calculus &amp; Analytic Geometry III</td>
<td>4</td>
</tr>
<tr>
<td>MATH 260</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
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<tr>
<td>CPSC 121</td>
<td>Computer Science I</td>
<td>3</td>
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</tbody>
</table>

### UPPER DIVISION

Select one of the following two courses:

- MATH 301 Fundamentals of Mathematics 3
- MATH 350 Numerical Methods 3
- MATH 413 Real Analysis I 3
- MATH 496 Comprehensive - Applied Math 1

Select one of the following two courses:

- MATH 321 Statistics for Experimentalists 3
- MATH 422 Mathematical Statistics 3

If MATH 422 is chosen, then one MATH 400 level elective may be replaced by a MATH 300 level elective.

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### ECONOMICS CONCENTRATION

39-40 Credits

Select one of the following two courses:

- MATH 421 Probability Theory 3
- MATH 433 Applied Linear Algebra 3
- MATH 439 Linear Algebra 3

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**REQUIRED COURSE DESIGNATIONS - see approved list**

- *ECON 301 pre-requisite ECON 201, requires a minimum grade of B-

**for list of approved RELI, Broadening & Designated courses, see: https://my.gonzaga.edu/academics/undergraduate-programs/general-degree-requirements-procedures/university-core**
Select three Statistics electives: 9 Credits

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<tbody>
<tr>
<td>MATH</td>
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<td>MATH</td>
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Cannot double-count with a course used elsewhere.

Options for Statistics Electives:

- MATH 422 Mathematical Statistics
- MATH 423 Stochastic Processes
- MATH 426 Experimental Design
- ECON 355 Regression Analysis
- ECON 451 Econometrics
- ECON 452 Time Series Analysis
- CPSC 322 Data Science Algorithms
- CPSC 323 Machine Learning and Intelligent Systems
- CPSC 324 Big Data Analytics
- PHYS 450 Statistical Physics

- Or any course with significant probability or statistics content with the prior approval of the Math Department Chair.

- All of these courses have pre-requisites, and may require courses outside of the concentration to be taken.

Check the catalog for pre-requisites when selecting electives.

One ECON 300-400 level elective: 3-4 credits

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<tbody>
<tr>
<td>ECON</td>
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Select one 300-400 level Math elective: 3 Credits

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<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH</td>
<td>3</td>
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Select one 400-level Math elective: 3 Credits

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<tbody>
<tr>
<td>MATH</td>
<td>3</td>
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</table>

Options for ECON 300-400 Level Elective: 3-4 Credits

- ECON 320 Economics of Sports
- *ECON 321 International Economics
- ECON 322/SOSJ 320 Work, Wages, and Inequality
- ECON 324 Economics of Environmental Protection
- ECON 325 Public Finance
- ECON 330 Antitrust Policy & Regulation
- ECON 333 Health Economics
- ECON 334 Behavioral Economics
- *ECON 352/352L Money & Banking + Lab
- ECON 355 Regression Analysis
- *ECON 451 Econometrics
- *ECON 452 Time Series Analysis (*recommended elective choices)

MATH Electives:

- Cannot double-count electives with another requirement.
- Cannot use MATH 335, 339, 432, or 499 as MATH electives.

- A maximum of three (3) total credits from the following may be counted toward Math electives: MATH 365 (may be taken for credit only once), MATH 390, MATH 490, MATH 497.

Check for pre-requisites when selecting electives.