

Degree Worksheet for the College of Arts and Sciences: 2023-2024

B.S. APPLIED MATHEMATICS

with CHEMISTRY and STATISTICS DOUBLE CONCENTRATION

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>

Credits Sem/Yr

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UNIVERSITY CORE REQUIREMENTS:

▶ FUNDAMENTAL CORE COURSES

Year 1: Understanding & Creating

| <i>Writing</i> | Credits Sem/Yr | |
|---|----------------|--------------------------|
| ENGL 101 Writing (fulfills 3 credits Writing Enriched)* | 3 | <input type="checkbox"/> |
| <i>Reasoning</i> | | |
| PHIL 101 Reasoning | 3 | <input type="checkbox"/> |
| <i>First Year Seminar</i> | | |
| Dept. 193 | 3 | <input type="checkbox"/> |
| <i>Communication & Speech</i> | | |
| COMM 100 Communication & Speech | 3 | <input type="checkbox"/> |
| <i>Math</i> | | |
| MATH (must be above Math 100) | 3 | <input type="checkbox"/> |
| <i>Scientific Inquiry (2cr + 1cr lab)</i> | | |
| BIOL or CHEM or PHYS 104/104L (taken year 1 or 2) | 3 | <input type="checkbox"/> |

Year 2: Being & Becoming

| <i>Christianity & Catholic Traditions</i> | Credits Sem/Yr | |
|---|----------------|--------------------------|
| RELI (see approved list)** | 3 | <input type="checkbox"/> |
| <i>Philosophy of Human Nature</i> | | |
| PHIL 201 Philosophy of Human Nature | 3 | <input type="checkbox"/> |

Year 3: Caring & Doing

| <i>World/Comparative Religion</i> | Credits Sem/Yr | |
|---|----------------|--------------------------|
| RELI (see approved list)** (fulfills 3cr Global Studies)* | 3 | <input type="checkbox"/> |
| <i>Ethics</i> | | |
| PHIL 301 Ethics or RELI 330 Principles-Christian Morality | 3 | <input type="checkbox"/> |

Year 4: Imagining the Possible

| <i>Core Integration Seminar</i> | Credits Sem/Yr | |
|---------------------------------|----------------|--------------------------|
| Dept. 432 | 3 | <input type="checkbox"/> |

NOTE: some courses have pre-requisites, check the catalog carefully!

▶ BROADENING COURSES - see approved list**

| Social & Behavioral Science | Credits Sem/Yr | |
|-----------------------------|----------------|--------------------------|
| | 3 | <input type="checkbox"/> |
| Literature | | |
| | 3 | <input type="checkbox"/> |
| History | | |
| | 3 | <input type="checkbox"/> |
| Fine Arts & Design | | |
| | 3 | <input type="checkbox"/> |

▶ REQUIRED COURSE DESIGNATIONS - see approved list**

| *Writing Enriched | Credits Sem/Yr | |
|-------------------|----------------|--------------------------|
| | 9 total | <input type="checkbox"/> |
| Social Justice | | |
| | 3 total | <input type="checkbox"/> |
| *Global Studies | | |
| | 6 total | <input type="checkbox"/> |

**for list of approved RELI, Broadening & Designated courses, see : <https://my.gonzaga.edu/academics/undergraduate-programs/general-degree-requirements-procedures/university-core>

B.S. APPLIED MATHEMATICS: 76 CREDITS

with CHEMISTRY & STATISTICS DOUBLE CONCENTRATION

APPLIED MATHEMATICS 34 Credits

LOWER DIVISION 18 Credits

| | Course | Course Title | Credits | Grade |
|--|----------|----------------------------------|---------|--------------------------|
| | MATH 157 | Calculus & Analytic Geometry I | 4 | <input type="checkbox"/> |
| | MATH 258 | Calculus & Analytic Geometry II | 4 | <input type="checkbox"/> |
| | MATH 259 | Calculus & Analytic Geometry III | 4 | <input type="checkbox"/> |
| | MATH 260 | Ordinary Differential Equations | 3 | <input type="checkbox"/> |
| | CPSC 121 | Computer Science I | 3 | <input type="checkbox"/> |

UPPER DIVISION 10 Credits

| | | | |
|----------|-----------------------------|---|--------------------------|
| MATH 301 | Fundamentals of Mathematics | 3 | <input type="checkbox"/> |
| MATH 350 | Numerical Methods | 3 | <input type="checkbox"/> |
| MATH 413 | Real Analysis I | 3 | <input type="checkbox"/> |
| MATH 496 | Comprehensive-Applied Math | 1 | <input type="checkbox"/> |

One of the following two courses: 3 Credits

| | | | |
|----------|------------------------|---|--------------------------|
| MATH 335 | Applied Linear Algebra | 3 | <input type="checkbox"/> |
| MATH 339 | Linear Algebra | 3 | <input type="checkbox"/> |

One of the following two courses: 3 Credits

| | | | |
|----------|---------------------------------|---|--------------------------|
| MATH 321 | Statistics for Experimentalists | 3 | <input type="checkbox"/> |
| MATH 422 | Mathematical Statistics | 3 | <input type="checkbox"/> |

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

CHEMISTRY & STATISTICS DOUBLE CONCENTRATION 42 Credits

| | | | |
|----------|--------------------|---|--------------------------|
| MATH 421 | Probability Theory | 3 | <input type="checkbox"/> |
|----------|--------------------|---|--------------------------|

Select one of the following two courses: 3 Credits

| | | | |
|----------|----------------------------|---|--------------------------|
| MATH 425 | Applied Statistical Models | 3 | <input type="checkbox"/> |
| MATH 426 | Experimental Design | 3 | <input type="checkbox"/> |

24 Credits

| | | | |
|---------------|-------------------------|---|--------------------------|
| CHEM 101/101L | General Chemistry+Lab | 4 | <input type="checkbox"/> |
| CHEM 205 | Inorganic Chemistry | 3 | <input type="checkbox"/> |
| CHEM 230/230L | Organic Chemistry I+Lab | 5 | <input type="checkbox"/> |
| CHEM 310/310L | Analytic Chemistry+Lab | 5 | <input type="checkbox"/> |
| CHEM 355 | Physical Chemistry | 3 | <input type="checkbox"/> |
| PHYS 121 | Physics I | 4 | <input type="checkbox"/> |

One of the following three courses: 3 Credits

| | | | |
|----------|--------------------------------|---|--------------------------|
| MATH 440 | Foundations of Applied Math | 3 | <input type="checkbox"/> |
| MATH 454 | Partial Differential Equations | 3 | <input type="checkbox"/> |
| MATH 462 | Nonlinear Systems & Chaos | 3 | <input type="checkbox"/> |

Select one 300-400 level Math elective: 3 Credits

| | | |
|------|---|--------------------------|
| MATH | 3 | <input type="checkbox"/> |
|------|---|--------------------------|

Cannot double-count with another requirement.

Select two Statistics electives: 6 Credits

| | | |
|------|---|--------------------------|
| MATH | 3 | <input type="checkbox"/> |
| | 3 | <input type="checkbox"/> |

Cannot double-count with a course used elsewhere. At least one course must be MATH.

Statistics Elective options: MATH 422, 423, 426, PHYS 323, ECON 355, 451, 452, CPSC 322, 323, 324, PSYC 450 **These courses have pre-requisites that may be outside the concentration.**

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.