

# College of Arts and Sciences 2025-2026 Degree Worksheet

## B.S. APPLIED MATHEMATICS with Physics 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

### UNIVERSITY CORE REQUIREMENTS:

#### ► FUNDAMENTAL CORE COURSES

##### Year 1: Understanding & Creating

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

##### Year 2: Being & Becoming

	Credits Sem/Yr
<i>Christianity &amp; Catholic Traditions</i>	
RELI <i>(see approved list)**</i>	3
<i>Philosophy of Human Nature</i>	
PHIL 201 Philosophy of Human Nature	3

##### Year 3: Caring & Doing

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

##### Year 4: Imagining the Possible

	Credits Sem/Yr
<i>Core Integration Seminar</i>	
Dept. 432	3

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

#### ► BROADENING COURSES - see approved list\*\*

	Credits Sem/Yr
Social & Behavioral Science	3
Literature	3
History	3
Fine Arts & Design	3

#### ► REQUIRED COURSE DESIGNATIONS - see approved list\*\*

	Credits Sem/Yr
*Writing Enriched	9 total
Social Justice	3 total
*Global Studies	6 total

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

**Check for pre-requisites when selecting electives!**

**MATH:** 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.

## B.S. APPLIED MATHEMATICS: 65 CREDITS with Physics Concentration

### APPLIED MATHEMATICS

**34 Credits**

#### LOWER DIVISION

**18 Credits**

Course	Course Title	Credits
MATH 157	Calculus & Analytic Geometry I	4
MATH 258	Calculus & Analytic Geometry II	4
MATH 259	Calculus & Analytic Geometry III	4
MATH 260	Ordinary Differential Equations	3
CPSC 121	Computer Science I	3

#### UPPER DIVISION

**10 Credits**

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

#### One of the following two courses:

**3 Credits**

MATH 335	Applied Linear Algebra	3
MATH 339	Linear Algebra	3

#### One of the following two courses:

**3 Credits**

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.*

### PHYSICS CONCENTRATION

**31 Credits**

	Credits
PHYS 121/121L	10
PHYS 122/122L	5
PHYS 121/121L Physics I + Lab	5
PHYS 122/122L Physics II + Lab	5

#### Two of the following four courses:

**6 Credits**

MATH 417	Complex Variables	3
MATH 440	Foundations of Applied Math	3
MATH 454	Partial Differential Equations	3
MATH 462	Nonlinear Systems & Chaos	3

#### Select two 200-300-400 level PHYS electives:

**6 Credits**

PHYS	3
PHYS	3

#### Select one 300-400 level Math elective:

**3 Credits**

MATH	3
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#### Select two 400-level Math electives:

**6 Credits**

MATH	3
MATH	3

*Cannot double-count with another requirement.*

#### Options for Physics 200, 300, 400 Electives:

- PHYS 224 Modern Physics
- PHYS 321 Classical Mechanics
- PHYS 322 Electricity & Magnetism
- PHYS 323 Statistical Mechanics
- PHYS 324 Quantum Mechanics\*
- PHYS 424 Advanced Quantum Mechanics\*\*\*
- PHYS 451 Fields, Oscillations, and Relativity\*\*
- PHYS 452 Optics
- PHYS 453 Solid State Physics\*
- PHYS 454 Nuclear & Particle Physics\*
- PHYS 455 Cosmology & Astrophysics
- PHYS 456 Biophysical Systems and Modeling

\* PHYS 324, 453, & 454 require PHYS 224 as a pre-requisite

\*\* PHYS 451 requires PHYS 224, 321, & 322 as pre-requisites

\*\*\* PHYS 424 requires PHYS 324 as a pre-requisite