

College of Arts and Sciences 2025-2026 Degree Worksheet
B.S. APPLIED MATHEMATICS with
ENVIRONMENTAL SCIENCE and STATISTICS DOUBLE CONCENTRATION
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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
Writing		
ENGL 101 Writing (fulfills 3 credits Writing Enriched)*	3	
Reasoning		
PHIL 101 Reasoning	3	
First Year Seminar		
Dept. 193	3	
Communication & Speech		
COMM 100 Communication & Speech	3	
Math		
MATH (must be above Math 100)	3	
Scientific Inquiry (2cr + 1cr lab)		
BIOL or CHEM or PHYS 104/104L (taken year 1 or 2)	3	

Year 2: Being & Becoming

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

Year 3: Caring & Doing

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

Year 4: Imagining the Possible

	Credits	Sem/Yr
Core Integration Seminar		
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>

B.S. APPLIED MATHEMATICS: 76 CREDITS
with ENVIRONMENTAL SCIENCE and
STATISTICS DOUBLE 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

Select one of the following two courses: 3 Credits

MATH 335	Applied Linear Algebra	3
MATH 339	Linear Algebra	3

Select 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.

ENVIRONMENTAL SCIENCE and
STATISTICS DOUBLE CONCENTRATION 42 Credits

3 Credits

MATH 421	Probability Theory	3
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Select one of the following two courses: 3 Credits

MATH 425	Applied Statistical Models	3
MATH 426	Experimental Design	3

14 Credits

ENVS 101	Introduction to Environmental Studies	3
ENVS 103/103L	Environmental Biology+Lab ⁽¹⁾	4
ENVS 320	Economics of Environmental Protection ⁽³⁾	3
ENVS 384	Intro to GIS in Biology ⁽⁴⁾	3

Select one of the following two course options: 4 Credits

CHEM 101/101L	General Chemistry+Lab	4
BIOL 105/105L	Info Flow-Biological System+Lab	4

Select one of the following two course options: 4 Credits

ENVS 110/110L	Intro to Earth Systems+Lab	4
ENVS 202/202L	Chemistry & the Environment+Lab ⁽²⁾	4

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Select <u>three</u> Statistics electives:	9 Credits
MATH	3
MATH	3
MATH	3

*Cannot double-count with a course used elsewhere.
 At least two courses must be MATH.*

Selection list for Statistics electives:

Cannot double-count with a requirement used elsewhere

- 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 & Intelligent Systems
- CPSC 324 Big Data Analytics
- PHYS 323 Statistical Mechanics
- PSYC 450 Advanced Statistics in Psychology

*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 you to take courses outside of the concentration.

Select one of the following three courses:	3 Credits
MATH 440 Foundations of Applied Math	3
MATH 454 Partial Differential Equations	3
MATH 462 Nonlinear Systems and Chaos	3

Select one 300-400 level Math elective:	3 Credits
MATH	3

Cannot double-count 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.

ENVS COURSES:

⁽¹⁾Alternative: BIOL 206/206L (cross-listed, pre-requisite BIOL 105/106)

⁽²⁾Pre-requisite CHEM 101/101L.

⁽³⁾Alternative: ECON 324 (cross-listed, pre-requisite ECON 200 or 201).

⁽⁴⁾Alternative: BIOL 344 (cross-listed, pre-requisite BIOL 106/206).