

College of Arts and Sciences 2024-2025 Degree Worksheet

B.S. APPLIED MATHEMATICS with Environmental Science 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 (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

	Credits	Sem/Yr
<i>Christianity & Catholic Traditions</i>		
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

	Credits	Sem/Yr
<i>World/Comparative Religion</i>		
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

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

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

► BROADENING COURSES - see approved list**

	Credits	Sem/Yr
Social & Behavioral Science	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**

	Credits	Sem/Yr
*Writing Enriched	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: 68 CREDITS with Environmental Science Concentration

APPLIED MATHEMATICS

34 Credits

LOWER DIVISION

18 Credits

Course	Course Title				
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"/>		

Select 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"/>		

Select 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.

ENVIRONMENTAL SCIENCE CONCENTRATION

34 Credits

ENVS 101	Introduction to Environmental Studies	3	<input type="checkbox"/>		
ENVS 103/103L	Environmental Biology+Lab ⁽¹⁾	4	<input type="checkbox"/>		
ENVS 320	Economics of Environmental Protection ⁽³⁾	3	<input type="checkbox"/>		
ENVS 384/384L	GIS and Ecological Techniques ⁽⁴⁾	4	<input type="checkbox"/>		

Select one of the following two course options:

4 Credits

CHEM 101/101L	General Chemistry+Lab	4	<input type="checkbox"/>		
BIOL 105/105L	Info Flow-Biological Systems+Lab	4	<input type="checkbox"/>		

Select one of the following two course options:

4 Credits

ENVS 110/110L	Intro to Earth Systems+Lab	4	<input type="checkbox"/>		
ENVS 202/202L	Chemistry & the Environment+Lab ⁽²⁾	4	<input type="checkbox"/>		

Select two of the following five courses:

6 Credits

MATH 425	Applied Statistical Models	3	<input type="checkbox"/>		
MATH 426	Experimental Design	3	<input type="checkbox"/>		
MATH 440	Foundations of Applied Math	3	<input type="checkbox"/>		
MATH 454	Partial Differential Equations	3	<input type="checkbox"/>		
MATH 462	Nonlinear Systems and Chaos	3	<input type="checkbox"/>		

Select one 300-400 level Math elective:

3 Credits

MATH		3	<input type="checkbox"/>		
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Select one 400-level Math elective:

3 Credits

MATH		3	<input type="checkbox"/>		
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Cannot double-count with another requirement.

⁽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 344/344L (cross-listed, pre-requisite BIOL 106/206).

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.