

College of Arts and Sciences 2024-2025 Degree Worksheet
B.S. APPLIED MATHEMATICS with STATISTICS CONCENTRATION

Page 1 of 2

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

B.S. APPLIED MATHEMATICS: 65-66 CREDITS with STATISTICS CONCENTRATION

APPLIED MATHEMATICS 34 Credits

LOWER DIVISION

18 Credits

Course	Course Title	Credits	Grade
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

13 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.

STATISTICS CONCENTRATION 31-32 Credits

MATH 421	Probability Theory	3	
----------	--------------------	---	--

Select one of the following two courses: 3 Credits

MATH 425	Applied Statistical Models	3	
MATH 426	Experimental Design	3	

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 & Chaos	3	

Select one of the following three sets of courses: 7-8 Credits

Biology Set:

BIOL 105/105L	Info Flow-Biological System + Lab	4	
BIOL 106	Energy Flow-Biological Systems	3	

Chemistry Set:

CHEM 101/101L	General Chemistry + Lab	4	
CHEM 205	Inorganic Chemistry	3	

Physics Set:

PHYS 121	Physics I (pre-req MATH 157)	4	
PHYS 122	Physics II (pre-req MATH 258)	4	

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

<i>Reasoning</i>	Credits Sem/Yr
PHIL 101 Reasoning	3

<i>First Year Seminar</i>	Credits Sem/Yr
Dept. 193	3

<i>Communication & Speech</i>	Credits Sem/Yr
COMM 100 Communication & Speech	3

<i>Math</i>	Credits Sem/Yr
MATH (must be above Math 100)	3

<i>Scientific Inquiry (2cr + 1cr lab)</i>	Credits Sem/Yr
BIOL or CHEM or PHYS 104/104L (taken year 1 or 2)	3

Year 2: Being & Becoming

<i>Christianity & Catholic Traditions</i>	Credits Sem/Yr
RELI (see approved list)**	3

<i>Philosophy of Human Nature</i>	Credits Sem/Yr
PHIL 201 Philosophy of Human Nature	3

Year 3: Caring & Doing

<i>World/Comparative Religion</i>	Credits Sem/Yr
RELI (see approved list)** (fulfills 3cr Global Studies)*	3

<i>Ethics</i>	Credits Sem/Yr
PHIL 301 Ethics or RELI 330 Principles-Christian Morality	3

Year 4: Imagining the Possible

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

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

BROADENING COURSES - see approved list**

Social & Behavioral Science	Credits Sem/Yr
	3

Literature	Credits Sem/Yr
	3

History	Credits Sem/Yr
	3

Fine Arts & Design	Credits Sem/Yr
	3

REQUIRED COURSE DESIGNATIONS - see approved list**

*Writing Enriched	Credits Sem/Yr
	9 total

Social Justice	Credits Sem/Yr
	3 total

*Global Studies	Credits Sem/Yr
	6 total

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

CONTINUED ON Page 2

College of Arts and Sciences 2024-2025 Degree Worksheet

B.S. APPLIED MATHEMATICS with STATISTICS CONCENTRATION

Page 2 of 2

CONTINUED FROM Page 1

Select two Statistics electives:

6 Credits

MATH	3	
	3	

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

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 324 Big Data Analytics
- PHYS 323 Statistical Mechanics
- PSYC 450 Advanced Statistics for 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 courses outside of the concentration to be taken.***

Select one 300-400 level Math elective:

3 Credits

MATH	3	
------	---	--

Select two 400-level Math electives:

6 Credits

MATH	3	
MATH	3	

Cannot double-count with another requirement

MATH Electives:

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 the catalog for pre-requisites when selecting electives