

Degree Worksheet for the College of Arts and Sciences: 2021-2022

B.S. APPLIED MATHEMATICS - Physics 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

	Credits Sem/Yr
	1

UNIVERSITY CORE REQUIREMENTS:

► FUNDAMENTAL CORE COURSES

Year 1: Understanding & Creating

Writing	Credits Sem/Yr
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

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

Year 3: Caring & Doing

World/Comparative Religion	Credits Sem/Yr
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

Core Integration Seminar	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	
	3
History	
	3
Fine Arts & Design	
	3

► REQUIRED COURSE DESIGNATIONS - see approved list**

*Writing Enriched	Credits Sem/Yr
	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: 65 CREDITS Physics 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 339	Linear Algebra	3	
MATH 350	Elementary Numerical Analysis	3	
MATH 413	Real Analysis I	3	
MATH 496	Comprehensive-Applied Math	1	

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

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	

Mathematics 300-400 Level Electives:

3 Credits

MATH	3	
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Mathematics 400 Level Electives:

6 Credits

MATH	3	
MATH	3	

Minimum of 6 credits must be from the Math electives list; cannot double-count with another requirement.

MATH 328 Operations Research
MATH 341 Modern Geometry
MATH 351 Combinatorics & Graph Theory
MATH 360-363 Selected Topics
MATH 414 Real Analysis II
MATH 417 Complex Variables
MATH 421 Probability Theory
MATH 423 Stochastic Processes
MATH 437 Abstract Algebra I
MATH 438 Abstract Algebra II
MATH 450-453 Selected Topics
MATH 454 Partial Differential Equations
MATH 457 Number Theory & Cryptography
MATH 459 Topology
MATH 462 Nonlinear Systems & Chaos
MATH 498A/498B Thesis I/II

10 Credits

PHYS 103/103L	Scientific Physics I/Lab	5	
PHYS 204/204L	Scientific Physics II/Lab	5	

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Physics 200, 300, 400 Level Electives:		6 Credits
PHYS	3	
PHYS	3	

PHYS 205 Modern Physics

PHYS 301 Intermediate Mechanics

PHYS 306 Electricity & Magnetism

PHYS 307 Optics

PHYS 402 Advanced Mechanics

PHYS 407 Electricity & Magnetism II

PHYS 409 Nuclear & Particle Physics

PHYS 415 Cosmology & Astrophysics

PHYS 450 Statistical Physics

PHYS 464 Intro to Quantum Physics

Check for pre-requisites when selecting electives!