

Degree Worksheet for the College of Arts and Sciences: 2019-2020

B.S. APPLIED MATHEMATICS

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 & 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 & 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>

B.S. APPLIED MATHEMATICS: 57-59 CREDITS No 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 499	Comprehensive		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.

NO CONCENTRATION

23-25 Credits

One of the following two courses:

3 Credits

MATH 454	Partial Differential Equations		3				
MATH 462	Nonlinear Systems & Chaos		3				

Mathematics Electives:

9 Credits

MATH	Math 300-400 level elective		3				
MATH	Math 400 level electives		6				

A minimum of 6 credits must be from 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 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

Two of the following three courses:

8 Credits

BIOL 105/105L	Info Flow-Biological System/Lab		4				
CHEM 101/101L	General Chemistry/Lab		4				
PHYS 103	Scientific Physics I		4				

One of the following four courses:

3-5 Credits

BIOL 106	Energy Flow-Biological Systems		3				
CHEM 205	Inorganic Chemistry		3				
CHEM 230/230L	Organic Chemistry I/Lab		5				
PHYS 204	Scientific Physics II		4				