

Degree Worksheet for the College of Arts and Sciences: 2020-2021

B.S. APPLIED MATHEMATICS - Biochemistry 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

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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	
<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 (must be above Math 100)	3	
<i>Scientific Inquiry (2cr + 1cr lab)</i>		
BIOL or CHEM or PHYS 104/104L (taken year 1 or 2)	3	

Year 2: Being & Becoming

		Credits Sem/Yr
<i>Christianity & Catholic Traditions</i>		
RELI (see approved list)**	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 (see approved list)** (fulfills 3cr Global Studies)*	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: 67 CREDITS

Biochemistry 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		

* Majors usually take Fall semester of their final year.

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.

BIOCHEMISTRY CONCENTRATION 33 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

21 Credits

CHEM 101/101L	General Chemistry/Lab		4		
CHEM 230/230L	Organic Chemistry I/Lab		5		
CHEM 231/231L	Organic Chemistry II/Lab		4		
CHEM 245/245L	Biochemistry/Lab		4		
CHEM 399	Advanced Topics		2		
CHEM 407	Special Topics in Biochemistry		2		

Check the catalog for pre-requisites when selecting electives.

