

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

## B.S. APPLIED MATHEMATICS - Chemistry 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="text"/>
<i>Reasoning</i>		
PHIL 101 Reasoning	3	<input type="text"/>
<i>First Year Seminar</i>		
Dept. 193	3	<input type="text"/>
<i>Communication &amp; Speech</i>		
COMM 100 Communication & Speech	3	<input type="text"/>
<i>Math</i>		
MATH (must be above Math 100)	3	<input type="text"/>
<i>Scientific Inquiry (2cr + 1cr lab)</i>		
BIOL or CHEM or PHYS 104/104L (taken year 1 or 2)	3	<input type="text"/>

##### Year 2: Being & Becoming

		Credits Sem/Yr
<i>Christianity &amp; Catholic Traditions</i>		
RELI (see approved list)**	3	<input type="text"/>
<i>Philosophy of Human Nature</i>		
PHIL 201 Philosophy of Human Nature	3	<input type="text"/>

##### Year 3: Caring & Doing

		Credits Sem/Yr
<i>World/Comparative Religion</i>		
RELI (see approved list)** (fulfills 3cr Global Studies)*	3	<input type="text"/>
<i>Ethics</i>		
PHIL 301 Ethics or RELI 330 Principles-Christian Morality	3	<input type="text"/>

##### Year 4: Imagining the Possible

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

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

#### ► BROADENING COURSES - see approved list\*\*

		Credits Sem/Yr
Social & Behavioral Science	3	<input type="text"/>
Literature	3	<input type="text"/>
History	3	<input type="text"/>
Fine Arts & Design	3	<input type="text"/>

#### ► REQUIRED COURSE DESIGNATIONS - see approved list\*\*

		Credits Sem/Yr
*Writing Enriched	9 total	<input type="text"/>
Social Justice	3 total	<input type="text"/>
*Global Studies	6 total	<input type="text"/>

\*\*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 Chemistry Concentration

#### APPLIED MATHEMATICS 34 Credits

##### LOWER DIVISION 18 Credits

	Course Course Title		Credits	Grade
MATH 157	Calculus & Analytic Geometry I	4	<input type="text"/>	
MATH 258	Calculus & Analytic Geometry II	4	<input type="text"/>	
MATH 259	Calculus & Analytic Geometry III	4	<input type="text"/>	
MATH 260	Ordinary Differential Equations	3	<input type="text"/>	
CPSC 121	Computer Science I	3	<input type="text"/>	

##### UPPER DIVISION 13 Credits

	Course Course Title		Credits	Grade
MATH 301	Fundamentals of Mathematics	3	<input type="text"/>	
MATH 339	Linear Algebra	3	<input type="text"/>	
MATH 350	Elementary Numerical Analysis	3	<input type="text"/>	
MATH 413	Real Analysis I	3	<input type="text"/>	
MATH 496*	Comprehensive-Applied Math	1	<input type="text"/>	

\* Majors usually take Fall semester of their final year.

##### One of the following two courses: 3 Credits

MATH 321	Statistics for Experimentalists	3	<input type="text"/>	
MATH 422	Mathematical Statistics	3	<input type="text"/>	

If MATH 422 is chosen, then one MATH 400 level elective may be replaced by a MATH 300 level elective.

#### CHEMISTRY CONCENTRATION 33 Credits

##### One of the following two courses: 3 Credits

MATH 454	Partial Differential Equations	3	<input type="text"/>	
MATH 462	Nonlinear Systems & Chaos	3	<input type="text"/>	

##### Mathematics 400 Level Electives: 6 Credits

MATH		3	<input type="text"/>	
MATH		3	<input type="text"/>	

All 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

##### 24 Credits

CHEM 101/101L	General Chemistry/Lab	4	<input type="text"/>	
CHEM 205	Inorganic Chemistry	3	<input type="text"/>	
CHEM 230/230L	Organic Chemistry I/Lab	5	<input type="text"/>	
CHEM 310/310L	Analytic Chemistry/Lab	5	<input type="text"/>	
CHEM 355	Physical Chemistry	3	<input type="text"/>	
PHYS 103	Scientific Physics I	4	<input type="text"/>	