

# Degree Worksheet for the College of Arts and Sciences: 2023-2024

## B.S. BIOCHEMISTRY (ACS Approved option)

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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

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

##### Year 2: Being & Becoming

		Credits Sem/Yr
<i>Christianity &amp; Catholic Traditions</i>		
RELI <i>(see approved list)**</i>	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 <i>(see approved list)** (fulfills 3cr Global Studies)*</i>	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. BIOCHEMISTRY (ACS Approved): 72 CREDITS

#### LOWER DIVISION

**46 Credits**

Course	Course Title	Credits	Grade
CHEM	101 General Chemistry	3	<input type="text"/>
CHEM	101L General Chemistry Lab	1	<input type="text"/>
CHEM	205 Inorganic Chemistry	3	<input type="text"/>
CHEM	230 Organic Chemistry I	4	<input type="text"/>
CHEM	230L Organic Chemistry I Lab	1	<input type="text"/>
CHEM	231 Organic Chemistry II	3	<input type="text"/>
CHEM	231L Organic Chemistry II Lab	1	<input type="text"/>
CHEM	245 Biochemistry	3	<input type="text"/>
CHEM	245L Biochemistry Lab	1	<input type="text"/>
CHEM	270 Career Development I	1	<input type="text"/>
BIOL	105 Info Flow in Biological Systems	3	<input type="text"/>
BIOL	105L Info Flow in Biological Systems Lab	1	<input type="text"/>
BIOL	106 Energy Flow in Biological Systems	3	<input type="text"/>
MATH	157 Calculus-Analytic Geometry I	4	<input type="text"/>
MATH	258 Calculus-Analytic Geometry II	4	<input type="text"/>
PHYS	121 Scientific Physics I	4	<input type="text"/>
PHYS	121L Scientific Physics I Lab	1	<input type="text"/>
PHYS	122 Scientific Physics II	4	<input type="text"/>
PHYS	122L Scientific Physics II Lab	1	<input type="text"/>

#### UPPER DIVISION

**26 Credits**

Course	Course Title	Credits	Grade
CHEM	310 Analytical Chemistry	3	<input type="text"/>
CHEM	310L Analytical Chemistry Lab	2	<input type="text"/>
CHEM	345L Advanced Biochemistry Lab	3	<input type="text"/>
CHEM	355 Physical Chemistry	3	<input type="text"/>
CHEM	355L Physical & Inorganic Chemistry Lab	1	<input type="text"/>
CHEM	370 Career Development II	1	<input type="text"/>
CHEM	399 Advanced Topic	2	<input type="text"/>
CHEM	485 Seminar	1	<input type="text"/>

#### One of the following options:

CHEM	488 Senior Literature Review	1	<input type="text"/>
<b>OR</b>			
CHEM	498A Thesis I	1	<input type="text"/>
CHEM	498B Thesis II	1	<input type="text"/>

**CHEM 498A & 498B are required for ACS approved degree**

#### One Course in CHEM 405-435 (Block 1)

Course	Course Title	Credits	Grade
CHEM		2	<input type="text"/>

#### One Course in CHEM 455-480 (Block 2)

Course	Course Title	Credits	Grade
CHEM		2	<input type="text"/>

#### Two Courses in CHEM 405-435 & 455-480 (Elective Block)

Course	Course Title	Credits	Grade
CHEM		2	<input type="text"/>
CHEM		2	<input type="text"/>

**College of Arts and Sciences: 2023-2024**

**B.S. BIOCHEMISTRY (ACS Approved option) - SAMPLE Yearly Progression**

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**70-72 Credits required for Major**

**Freshman**

<i>FALL</i>				<i>SPRING</i>			
Course	Course Title	Credit	Grade	Course	Course Title	Credits	Grade
CHEM	101 General Chemistry	3		CHEM	230 Organic Chemistry I	4	
CHEM	101L General Chemistry Lab	1		CHEM	230L Organic Chemistry I Lab	1	
BIOL	105 Info Flow in Biological Systems	3		BIOL	106 Energy Flow in Biological Systems	3	
BIOL	105L Info Flow in Biological Systems Lab	1		MATH	258 Calculus-Analytic Geometry II	4	
MATH	157 Calculus-Analytic Geometry I	4			CORE <sup>(1)</sup>	3	
	CORE <sup>(1)</sup>	3			CORE <sup>(1)</sup>	3	
<b>15</b>				<b>18</b>			

**Sophomore**

<i>FALL</i>				<i>SPRING</i>			
Course	Course Title	Credit	Grade	Course	Course Title	Credits	Grade
CHEM	205 Inorganic Chemistry	3		CHEM	245 Biochemistry	3	
CHEM	231 Organic Chemistry II	3		CHEM	245L Biochemistry Lab	1	
CHEM	231L Organic Chemistry II Lab	1		CHEM	270 Career Development I	1	
PHYS	103 Scientific Physics I	4		CHEM	310 Analytical Chemistry	3	
PHYS	103 Scientific Physics I Lab	1		CHEM	310L Analytical Chemistry Lab	2	
	CORE <sup>(2)</sup>	3			CORE <sup>(2)</sup>	3	
	CORE <sup>(2)</sup>	3			CORE <sup>(2)</sup>	3	
<b>18</b>				<b>16</b>			

**Junior**

<i>FALL</i>				<i>SPRING</i>			
Course	Course Title	Credit	Grade	Course	Course Title	Credits	Grade
CHEM	355 Physical Chemistry	3		CHEM	345 Advanced Biochemistry Lab	3	
CHEM	355L Physical & Inorganic Chemistry Lab	1		CHEM	370 Career Development II	1	
PHYS	204 Scientific Physics II	4		CHEM	xxx <sup>(5)</sup> Advanced Topic/Special Topic	2	
PHYS	204L Scientific Physics II Lab	1			CORE <sup>(3)</sup>	3	
	CORE <sup>(3)</sup>	3			CORE <sup>(3)</sup>	3	
	CORE <sup>(3)</sup>	3			CORE <sup>(3)</sup>	3	
<b>15</b>				<b>15</b>			

**Senior**

<i>FALL</i>				<i>SPRING</i>			
Course	Course Title	Credit	Grade	Course	Course Title	Credits	Grade
CHEM	485 Seminar	1		CHEM	498B <sup>(6)</sup> Thesis II	1	
CHEM	498A Thesis I	1		CHEM	xxx <sup>(5)</sup> Advanced Topic/Special Topic	2	
CHEM	xxx <sup>(5)</sup> Advanced Topic/Special Topic	2		CHEM	xxx <sup>(5)</sup> Advanced Topic/Special Topic	2	
CHEM	xxx <sup>(5)</sup> Advanced Topic/Special Topic	2			CORE <sup>(4)</sup>	3	
	CORE <sup>(4)</sup>	3			CORE <sup>(4)</sup>	3	
	CORE <sup>(4)</sup>	3			CORE <sup>(4)</sup>	3	
	CORE <sup>(4)</sup>	3			CORE <sup>(4)</sup>	3	
<b>15</b>				<b>17</b>			

**NOTES:**

1. Students must take the First Year Seminar (*DEPT* 193) in their first year, and they are encouraged to take COMM 100, PHIL 101, and ENGL 101 in their first year.
2. Students are encouraged to complete the 2nd year Core courses in their second year.
3. Students are encouraged to complete the 3rd year Core courses in their third year.
4. Students are encouraged to complete the Core Integration Seminar (*DEPT* 432) in their fourth year.
5. Students must complete one Advanced Topic (CHEM 399) course, one Special Topic-Block 1 (CHEM 405-435) course, and one Special Topic-Block 2 (CHEM 455-480) course, and two more Special Topic Courses from either Block 1 or Block 2.
6. Students are required to present their thesis work at the departmental poster session.