

College of Arts and Sciences 2024-2025 Degree Worksheet

B.A. BIOLOGY with Research 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

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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	<input type="checkbox"/>
<i>Reasoning</i> PHIL 101 Reasoning	3	<input type="checkbox"/>
<i>First Year Seminar</i> Dept. 193	3	<input type="checkbox"/>
<i>Communication & Speech</i> COMM 100 Communication & Speech	3	<input type="checkbox"/>
<i>Math</i> MATH (must be above Math 100)	3	<input type="checkbox"/>
<i>Scientific Inquiry (2cr + 1cr lab)**</i> BIOL or CHEM or PHYS 104/104L (taken year 1 or 2)	3	<input type="checkbox"/>

Year 2: Being & Becoming

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

Year 3: Caring & Doing

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

Year 4: Imagining the Possible

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

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

► BROADENING COURSES - see approved list**

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

► REQUIRED COURSE DESIGNATIONS - see approved list**

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

****for list of approved RELI, Broadening & Designated courses, see :**
<https://my.gonzaga.edu/academics/undergraduate-programs/general-degree-requirements-procedures/university-core>

****BIOL 105/105L meets the Scientific Inquiry requirement of the University Core for Biology Majors & Minors.**

Credits from BIOL 497 Biology Internship, do not satisfy any requirements for the Biology Major or Minor.

B.A. BIOLOGY-Research Concentration

51-53 CREDITS

LOWER DIVISION

28 Credits

Course	Course Title	Credits	Grade
BIOL 105/105L	Info Flow in Biological Systems + Lab**	4	<input type="checkbox"/>
BIOL 106	Energy Flow in Biological Systems	3	<input type="checkbox"/>
BIOL 111	Biology Pathways	1	<input type="checkbox"/>
BIOL 205/205L	Physiology & Biodiversity + Lab	4	<input type="checkbox"/>
BIOL 206/206L	Ecology + Lab	4	<input type="checkbox"/>
BIOL 207/207L	Genetics + Lab	4	<input type="checkbox"/>
CHEM 101/101L	General Chemistry + Lab	4	<input type="checkbox"/>

One of the following two-course + lab combinations:

Course	Course Title	Credits	Grade
CHEM 102/102L	General Chemistry II + Lab	4	<input type="checkbox"/>
CHEM 230/230L	Organic Chemistry I + Lab	4	<input type="checkbox"/>
ENVS 202/202L	Applied Environmental Chemistry + Lab	4	<input type="checkbox"/>

UPPER DIVISION + Research

23-25 Credits

Course	Course Title	Credits	Grade
BIOL 399	Advanced Topics	2	<input type="checkbox"/>
BIOL 495	Senior Evaluation	0	<input type="checkbox"/>
BIOL 499	Senior Colloquium	1	<input type="checkbox"/>

BIOL Upper Division Electives:

9 Credits

	Credits	Sem/Yr
BIOL	<input type="checkbox"/>	<input type="checkbox"/>
BIOL	<input type="checkbox"/>	<input type="checkbox"/>
BIOL	<input type="checkbox"/>	<input type="checkbox"/>

RESEARCH CONCENTRATION

Complete additional requirements 1 - 7, details Page 2.

1. - 4. see details on Page 2.

1.	BIOL 498 Research	4	<input type="checkbox"/>
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5.	BIOL 484 Research Seminar	1	<input type="checkbox"/>
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Also attend 12 biology-related seminars + submit reflection on each

6. Select one of the following two calculus courses:

MATH 148	Survey of Calculus	3	<input type="checkbox"/>
MATH 157	Calculus & Analytic Geometry I	4	<input type="checkbox"/>

7. Complete one of the following:

MATH 121	Introductory Statistics	3	<input type="checkbox"/>
MATH 321	Statistics for Experimentalists	3	<input type="checkbox"/>
BIOL 305	Biological Data Analysis	4	<input type="checkbox"/>

****BIOL 105/105L meets the Scientific Inquiry requirement of the University Core for Biology Majors & Minors.**

*Students must earn a C- grade or better in BIOL 105/105L & BIOL 106 in order to take BIOL 205, 206, or 207. Students must also get a C- grade or better in BIOL 205/205L, 206/206L, 207/207L & BIOL 399 in order to take BIOL 499.

For upper division biology electives, a minimum of 10 credits (B.S.), 6 credits (B.A.), or 4 credits (Minor) must be biology courses taken from Gonzaga faculty. Students participating in study abroad programs should make note.

All courses should be chosen in consultation with a Biology faculty advisor.

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The Research Concentration is designed to make research experiences available to more students, to show students the value of science education outreach through experiential learning, and to provide students with a more solid foundation in biological mathematics and science communication. It consists of a number of courses and experiences designed to prepare students to pursue research in some venue (graduate school, industry, government, medical school, or science education) after graduation. Students can enter the program at any time, although we anticipate most students will enter the program as sophomores or juniors.

To complete the Research Concentration, the following requirements are added to the requirements for the B.A. degree in Biology:

1. Participate in a significant research experience. This means working on an independent research project for the equivalent of **4 credits**. Most students can fulfill this requirement in one summer of full-time research or four academic semesters of research while enrolled in other classes. Enrolling in the Research Concentration does not guarantee a research experience. It is the student's responsibility to secure a research position. This requirement can be fulfilled by working with a GU faculty member, or with prior permission, with a faculty member at a different institution.
2. Present the results from the independent research (in oral or poster format) to the scientific community at an event organized for that purpose.
3. Write up the research results under advisement with the your research mentor. Final papers will be turned in to the Research Coordinator the last month of the final semester you are enrolled at Gonzaga. If you did research off campus, see the Research Coordinator to arrange a local writing mentor.
4. Participate in science education outreach for 16 hours one semester (BIOL 295/CHEM 295 - 0 credits).
5. Take BIOL 484 Research Seminar (**1 credit**) and attend a minimum of 12 biology-related seminars (including those in BIOL 484), and write and submit a seminar reflection for each seminar.
6. Take a college calculus course (MATH 148 Survey of Calculus (**3cr**) or MATH 157 Calculus and Analytic Geometry I (**4cr**)).
7. Complete a statistics course (MATH 121 or MATH 321)(**3 credits**) or a biological mathematics course, BIOL 305 Biological Data Analysis (**4 credits**).