

Saint Joseph's University

BS Biology Major GEP Curriculum Requirements *(For Students entering Fall 2023 and later)*

Name: _____

ID # _____

General Education Program (GEP)

GEP Signature Core (19 credits)

Sem.	Course #
	First Year Seminar(XXX150). <i>BIO 150L Phage Lab also meets the FYS req.</i>
	PHL 154 Moral Foundations
	Theology Signature Core (THE 153, 154, or 155)
	ENG 102 Texts and Contexts (<i>pre-req: ENG 101</i>)
	HIS 154 Forging the Modern World
	Faith & Reason (<i>pre-reqs: THE154 & PHL154</i>)
	INT 151 Inequality in American Society (Required for students entering Fall 2023 and later)

Variable Courses (# of credits varies, depending on math & language placement)

	ENG 101 Craft of Language
	Art, Music/Theatre/Film, or Lit
	Math Beauty (MAT 155, MAT 161, or higher level calculus, based on placement)
	BIO 101 & 101L Bio I: Cells + Lab
	Social/Behavioral Science
	Non-Native Language I
	Non-Native Language II
	Philosophical Anthro (pre-req: PHL 154)
	Religious Difference (THE or REL)

Integrative Learning Courses (Prerequisites to these courses will be counted as free electives.)

	CHM 125/125L General Chem II + Lab (FY Spring))
	CHM 215/215L Organic Chem II + Lab (Sophomore spring)
	PHY 102/102L General Physics I + Lab (Junior Fall)

Overlays (Complete 4 overlays (EI, WI, DGNW, DIV). May be combined with other GEP requirements, major courses, or electives.)

	Diversity
	Diversity or Global or Non-Western
	Ethics-Intensive (pre-req: PHL 154)
	Writing-Intensive (pre-req: ENG 101)

Major Requirements

Students may declare a [concentration](#) in the major, but they are not required to do so. Refer to the link for more information on options.

Sem.	Course #
	BIO 102/102L Bio II: Genetics + Lab
	BIO 201/201L Bio III: Organismic Biology + Lab
	MAT 128 Applied Statistics
	Group A : Cell Structure & Function
	Group B : Systemic Organization
	Group C : Evolution & Diversity of Life

13 additional Major Elective Credits required - [See list.](#)

	Biology Major Elective

BIO 290 and 390 (required non-credit seminar)

A non-credit BIO seminar is required each semester for Sophomores, Juniors and Seniors.

* BIO Seminar 290 is taken in fall of sophomore year.

* BIO Seminar 390 is taken in sophomore spring & both semesters junior & senior year

Electives (Minimum 18 elective credits required for graduation.)

	Free Elective	CHM 120/120L General Chem I + Lab
	Free Elective	CHM 210/210L Organic Chem I + Lab
	Free Elective	MAT 120 Pre-Calculus (if needed)
	Free Elective	PHY 101/101L Gen Phys 1 and lab
	Free Elective	

*See reverse side for additional notes on Biology requirement

Freshman Year					
Fall	Cred.		Spring	Cred.	
BIO 101, 101L Cells (or Phage Safari I) ¹	4	<input type="checkbox"/>	BIO 102, 102L Genetics (or Phage Safari II)	4	<input type="checkbox"/>
CHM 120, 120L General Chemistry I	4	<input type="checkbox"/>	CHM 125, 125L General Chemistry II (ILC)	4	<input type="checkbox"/>
MAT 155 or MAT 161 (GEP Math Beauty)	3 or 4	<input type="checkbox"/>	Non-Native Language II (GEP)	3 or 4	<input type="checkbox"/>
Non-Native Language I (GEP)	3 or 4	<input type="checkbox"/>	ENG 101 Craft of Language (<i>if not completed in fall</i>) or ENG 102 Text & Contexts (GEP)	3	<input type="checkbox"/>
Option: ENG 101 Craft of Language (GEP) ²	3	<input type="checkbox"/>	First Year Seminar (GEP) (if no Phage Safari)	3	<input type="checkbox"/>
Total Semester Credits	14-16			17-18	
Sophomore Year					
Fall	Cred.		Spring	Cred.	
BIO 201/201L Organismic Bio	4	<input type="checkbox"/>	Biology Major Elective	3 or 4	<input type="checkbox"/>
CHM 210/210L Organic Chemistry I	4	<input type="checkbox"/>	CHM 215/215L Organic Chemistry II (ILC)	4	<input type="checkbox"/>
MAT 128 Applied Statistics	3	<input type="checkbox"/>	Social Science (GEP)	3	<input type="checkbox"/>
PHL 154 Moral Foundations (GEP)	3	<input type="checkbox"/>	Theology Signature (THE 153, 154, or 155)	3	<input type="checkbox"/>
BIO Seminar 290	0	<input type="checkbox"/>	Free Elective or ENG 102 (<i>if not completed in first year</i>)	3	<input type="checkbox"/>
INT 151 Inequality in American Society	1		BIO Seminar 390	0	<input type="checkbox"/>
Total Semester Credits	15			16	
Junior Year					
Fall	Cred.		Spring	Cred.	
Biology Major Elective	3 or 4	<input type="checkbox"/>	Biology Major Elective	3 or 4	<input type="checkbox"/>
PHY 101/101L General Physics I + Lab	4	<input type="checkbox"/>	PHY 102/102L General Physics II + Lab (ILC)	3	<input type="checkbox"/>
PHL Anthropology (GEP)	3	<input type="checkbox"/>	Religious Difference (GEP)	3	<input type="checkbox"/>
Free Elective	3	<input type="checkbox"/>	Free Elective/ GEP Overlay	3	<input type="checkbox"/>
HIS 154 (GEP)	3	<input type="checkbox"/>	Free Elective/GEP Overlay	3	<input type="checkbox"/>
BIO Seminar 390	0	<input type="checkbox"/>	BIO Seminar 390	0	<input type="checkbox"/>
Total Semester Credits	16			15	
See next page for senior Year					

¹ Phage Safari Lab (BIO 150L or 151L) also fulfills the FYS requirement in the GEP. For more information on Phage Lab, see <https://sites.sju.edu/biology/>

²Students can opt to complete 4 courses (14-16 credits) in the first semester or opt to take an additional course (17-19 credits). Those opting to take 14-16 credits will stay on track for graduation. Please talk about your options with an advisor during your registration for first semester courses.

Senior Year					
Fall	Cred.		Spring	Cred.	
Biology Major Elective	3 or 4	<input type="checkbox"/>	Biology Major Elective	3 or 4	<input type="checkbox"/>
Biology Major Elective	3 or 4	<input type="checkbox"/>	Biology Major Elective	3 or 4	<input type="checkbox"/>
Faith & Reason (GEP)	3	<input type="checkbox"/>	ART/LIT (GEP)	3	<input type="checkbox"/>
Free Elective/GEP Overlay	3	<input type="checkbox"/>	Free Elective/GEP Overlay	3	<input type="checkbox"/>
BIO Seminar 390 (0 credit)	0	<input type="checkbox"/>	BIO Seminar 390 (0 credit)	0	<input type="checkbox"/>
Total Semester Credits	12			12	

Biology Major - Typical Course Sequence

Above is listed the typical curriculum for a Biology major (GEP). This schedule presumes that the student enters as a first-year student, without advanced placement in mathematics, English, etc. Students interested in declaring a major in Biology or changing their major to Biology from a different major should consult with Dr. Jonathan Fingerut (Chair) or Dr. Shaan Bhatt (Advising Coordinator) in the Department of Biology.

1. A minimum of 120 credits with a minimum 2.0 GPA are required for graduation. Students must complete all general education, major, and minor (if applicable) requirements and a minimum of 18 credits of free electives.
2. MAT 155, MAT 161 or higher level calculus is required. MAT 120 (Precalculus) satisfies an elective requirement.
3. A first year seminar is any course numbered 150 (e.g., ENG 150, ASC 150, etc). For students who are accepted into the Phage lab (BIO 151L), they may use this course to meet the first year seminar requirement.
4. BIO 290 Seminar. In the fall semester, sophomores take the special Bio seminar, BIO 290. BIO 290 is a non-credit bearing course.
5. BIO 390 Seminar. In addition to the courses listed above, BIO 390 seminar is required each semester for juniors and seniors. Sophomores take BIO 390 only in the spring semester because they are enrolled in BIO 290 in the fall semester. BIO 390 is a non-credit bearing course
6. 18 credits of free electives are required. CHM 120/120L General Chemistry I, CHM 210/210L Organic chemistry I, PHY 101/101L General Physics I, and MAT 120 Precalculus count as free electives and fulfill part of the 18-credit free elective requirement.

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Biology Major Concentrations

Students majoring in Biology may elect to declare a single concentration within the major. Concentration options include Microbiology, Neurobiology, Ecology, Evolution & Behavior, and Cell & Molecular Biology. Please Note:

- Students are not required to declare a concentration.
- Students are not guaranteed a particular sequence of courses to ensure that they can complete a concentration.
- Pursuit of a concentration must be declared by the end of the drop-add period in the last semester of enrollment, but students wishing to declare a concentration are advised to plan ahead.
- Courses used to meet the concentration requirements may also be used to satisfy the A-B-C group requirements.
- Students may count one semester of appropriate independent research (BIO 393 or 394) or an internship (BIO 391 or 392) toward any concentration; decisions about whether research or internships can count will be made by the chair or designated faculty member

Microbiology Concentration Requirements

- BIO 416 Microbiology
- Three additional courses from the following:
 - BIO 411 Molecular Genetics
 - BIO 422 Applied & Environmental Microbiology
 - BIO 424 Biotechnology
 - BIO 436 Virology
 - BIO 425 Bacterial Pathogenesis
 - BIO 426 Fermentation Science

Neurobiology Concentration Requirements

- BIO 412 Neurobiology
- Three additional courses from the following:
 - BIO 400 Developmental Genetics
 - BIO 401 Animal Behavior
 - BIO 402 Advanced Cell Biology
 - BIO 411 Molecular Genetics
 - BIO 417 Systemic Physiology
 - BIO 430 Neurological Disorders
 - BIO 3XX Neuropsychology
 - BIO 3XX Neurobiology of Stress
 - BIO 432 Genes and Brains
 - BIO 455 Biological Basis of Neurologic Disorders

Ecology, Evolution & Behavior Concentration Requirements

- Four courses chosen from the following:
 - BIO 401 Animal Behavior
 - BIO 406 Comparative Anatomy
 - BIO 409 Ecology
 - BIO 413 Plant Physiological Ecology
 - BIO 414 Plant Systematics
 - BIO 419 Invertebrate Zoology
 - BIO 422 Applied & Environmental Microbiology
 - BIO 423 Evolution
 - BIO 429 Environmental Science

Cell & Molecular Biology Concentration Requirements

- Choose one of the following:
 - BIO 402 Advanced Cell Biology
 - BIO 411 Molecular Genetics
- Three additional courses from the following:
 - BIO 402 Advanced Cell Biology
 - BIO 404 Biochemistry
 - BIO 410 Light and Electron Microscopy
 - BIO 411 Molecular Genetics
 - BIO 415 Immunology
 - BIO 416 Microbiology
 - BIO 420 Bioinformatics
 - BIO 424 Biotechnology
 - BIO 428 Histopathology