BIOLOGY, B.S. TO MASTERS IN CHEMICAL BIOLOGY ACCELERATED PROGRAM

Complete a bachelor's degree in biology and a master's in chemical biology in five years through Saint Louis University's B.S. in Biology to M.S./M.A. in Chemical Biology Accelerated Program.

SLU's multi-disciplinary program in chemical biology provides a strong foundation in chemistry and branches out into medicinal chemistry, pharmacology and molecular biology. The master's degree can either be a coursework M.A. degree or a thesis-based M.S. degree. This program provides excellent preparation for a career in the pharmaceutical and biotech industries.

For additional information, see the catalog entries for the following programs:

Biology, B.S. (https://catalog.slu.edu/colleges-schools/arts-sciences/biology/biology-bs/)

Chemical Biology, M.A. (https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemical-biology-ma/)

Chemical Biology, M.S. (https://catalog.slu.edu/colleges-schools/science-engineering/chemistry/chemical-biology-ms/)

Requirements

Existing SLU undergraduates pursuing a B.S. in biology-biological chemistry may apply to the accelerated bachelor's-master's (ABM) program after completing 75 credits (typically during the spring semester of their third year) if they have a GPA of 3.00 or higher, commensurate with the admission standards for the master's program in chemical biology. The application will include a personal statement and three letters of support, of which at least two must be from members of the SLU faculty.

If accepted into the program, students who have completed 90 undergraduate credits (typically during their fourth year) may apply up to 15 credits of graduate-level courses (5000-level and up) towards both the undergraduate and graduate degree requirements, assuming a grade of "B" or better. Students targeting a coursework-based M.A. degree will be mentored by the chemical biology program coordinator. Students targeting a thesis-based M.S. will take CHEB-5110 in the summer after having completed 90 credits (typically between years three and four) and select a research mentor.

Prior to 120 credits, students enrolled in the program will need to adhere to the continuation standards of their undergraduate major. After 120 credits (typically the fifth year), the chemical biology master's level program continuation requirements apply.

Roadmap

Roadmaps are recommended semester-by-semester plans of study for programs and assume full-time enrollment unless otherwise noted.

Courses and milestones designated as critical (marked with !) must be completed in the semester listed to ensure a timely graduation. Transfer credit may change the roadmap.

This roadmap should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor/mentor each semester. Requirements, course availability and sequencing are subject to change.

M.A. in Chemical Biology Option

Course	Title	Credits
Year One		
Fall		
BIOL 1240 & BIOL 1245	General Biology: Information Flow and Evolution and Principles of Biology I Laboratory	4
CHEM 1110 & CHEM 1115	General Chemistry 1 and General Chemistry 1 Laboratory	4
University Core		6
	Credits	**14**
Spring		
BIOL 1260 & BIOL 1265	General Biology: Transformations of Energy and Matter and Principles of Biology II Laboratory	4
CHEM 1120 & CHEM 1125	General Chemistry 2 and General Chemistry 2 Laboratory	4
MATH 1510	Calculus I	4
University Core		3
	Credits	**15**
Year Two		
Fall		
BIOL 3020	Biochemistry and Molecular Biology	3
CHEM 2410 & CHEM 2415	Organic Chemistry 1 and Organic Chemistry 1 Laboratory	4
University Core		10
	Credits	**17**
Spring		
BIOL 3040	Cell Structure & Function	3
BIOL 4790	Biometry	4
CHEM 2440 & CHEM 2445	Organic Chemistry 2 for Majors and Organic Chemistry 2 Laboratory for Majors	4
University Core		6
	Credits	**17**
Year Three		
Fall		
BIOL 3070	General Ecology	3
BIOL 4980	Advanced Independent Study	1
PHYS 1310 & PHYS 1320	College Physics I and College Physics I Laboratory	4
University Core		6
	Credits	**14**
Spring		
BIOL 4070	Advanced Biological Chemistry	3
BIOL 3030	Principles of Genetics	0-3
BIOL Elective Lab		4

PHYS 1330 & PHYS 1340	College Physics II and College Physics II Laboratory	4
	Credits	**11-14**
Year Four		
Fall		
BIOL 4050	Molecular Techniques Lab	2
BIOL 4980	Advanced Independent Study	1
BIOL 5700	Advanced Molecular Biology	3
CHEM 5630	Introduction to Chemical Biology and Biotechnology	3
University Core		6
	Credits	**15**
Spring		
BIOL 3010	Evolutionary Biology	3
BIOL 3060	Cell Structure & Function Laboratory	1
BIOL 4980	Advanced Independent Study	1
CHEM 5470	Medicinal Chemistry	3
PPY 5410	Molecular Pharmacology	3
Electives or University Core (if needed)		6
	Credits	**17**
Summer		
CHEB 5980	Graduate Independent Study in Chemical Biology	3
	Credits	**3**
Year Five		
Fall		
CHEB 5970	Research Topics	3
! Graduate Elective [†]		6
	Credits	**9**
Spring		
CHEB 5970	Research Topics	3
Graduate Elective [†]		6
Oral examination		
	Credits	**9**
	Total Credits	**141-144**

M.S. in Chemical Biology Option

Course	Title	Credits
Year One		
Fall		
BIOL 1240 & BIOL 1245	General Biology: Information Flow and Evolution and Principles of Biology I Laboratory	4
CHEM 1110 & CHEM 1115	General Chemistry 1 and General Chemistry 1 Laboratory	4
University Core		6
	Credits	**14**
Spring		
BIOL 1260 & BIOL 1265	General Biology: Transformations of Energy and Matter and Principles of Biology II Laboratory	4
CHEM 1120 & CHEM 1125	General Chemistry 2 and General Chemistry 2 Laboratory	4
MATH 1510	Calculus I	4
University Core		3
	Credits	**15**
Year Two		
Fall		
BIOL 3020	Biochemistry and Molecular Biology	3
CHEM 2410 & CHEM 2415	Organic Chemistry 1 and Organic Chemistry 1 Laboratory	4
University Core		9
	Credits	**16**
Spring		
BIOL 3040	Cell Structure & Function	3
BIOL 4790	Biometry	4
CHEM 2440 & CHEM 2445	Organic Chemistry 2 for Majors and Organic Chemistry 2 Laboratory for Majors	4
University Core		6
	Credits	**17**
Year Three		
Fall		
BIOL 3070	General Ecology	3
BIOL 4980	Advanced Independent Study	1
PHYS 1310 & PHYS 1320	College Physics I and College Physics I Laboratory	4
BIOL Lab Elective		1-4
University Core		6
	Credits	**15-18**
Spring		
BIOL 3060	Cell Structure & Function Laboratory	1
BIOL 3030	Principles of Genetics	3
BIOL 4070	Advanced Biological Chemistry	3
BIOL Elective		3
PHYS 1330 & PHYS 1340	College Physics II and College Physics II Laboratory	4
	Credits	**14**
Summer		
CHEB 5110	Introduction to Chemical Biology Research I	1
	Credits	**1**
Year Four		
Fall		
BIOL 4050	Molecular Techniques Lab	2
BIOL 4980	Advanced Independent Study	1
BIOL 5700	Advanced Molecular Biology	3
CHEM 5630	Introduction to Chemical Biology and Biotechnology	3
University Core		6
	Credits	**15**
Spring		
BIOL 3010	Evolutionary Biology	3
BIOL 4980	Advanced Independent Study	1
CHEB 5120	Introduction to Chemical Biology Research II	2

PPY 5410	Molecular Pharmacology	3
Electives or University Core (if needed)		6
	Credits	**15**
Summer		
CHEB 5970	Research Topics	3
	Credits	**3**
Year Five		
Fall		
CHEB 5990	Thesis Research	3
Graduate Elective [†]		6
Submit Research Progress Report		
	Credits	**9**
Spring		
CHEM 5470	Medicinal Chemistry	3
CHEB 5990	Thesis Research	3
Submit and defend Master's Thesis		
	Credits	**6**
	Total Credits	**140-143**

Contact Us

For additional information about this program, please contact biology@slu.edu or call 314-977-3900.