

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

Complete an undergraduate B.S. degree in biology, together with a master's degree in chemical biology, in five years through Saint Louis University's biology, B.S. to master's in chemical biology accelerated program.

This 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.

Chemical Biology, M.A.

Chemical Biology, M.S.

Requirements

Existing SLU undergraduates pursuing a B.S. in biochemistry or B.S. in biology-biological chemistry and molecular biology majors 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
A&S 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
A&S 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
A&S 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
A&S Core		6
Credits		17
Year Three		
Fall		
BIOL 3030	Principles of Genetics	3
A&S Core		3
BIOL 4980	Advanced Independent Study	1
PHYS 1310 & PHYS 1320	College Physics I and College Physics I Laboratory	4
A&S Core		3
Credits		14
Spring		
BIOL 4070	Advanced Biological Chemistry	3
BIOL Elective		3
PHYS 1330 & PHYS 1340	College Physics II and College Physics II Laboratory	4
BIOL 3260	Biology of Plants & Fungi	4
Credits		14

Year Four**Fall**

BIOL 4050	Molecular Technique Lab	2
BIOL 4980	Advanced Independent Study	1
BIOL 5700	Advanced Molecular Biology	3
CHEB 5630	Chemical Biology & Biotech	3
A&S 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	Principles of Medicinal Chemistry	3
PPY 5410	Molecular Pharmacology	3
Elective or A&S Core (if needed)		6

Credits **17**

Summer

CHEB-5980	Graduate Reading	3
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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 **144**

M.S. in Chemical Biology Option

Course	Title	Credits
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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
A&S 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
A&S 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
A&S 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
A&S Core		6

Credits **17**

Year Three**Fall**

BIOL 3030	Principles of Genetics	3
BIOL 4980	Advanced Independent Study	1
PHYS 1310 & PHYS 1320	College Physics I and College Physics I Laboratory	4
A&S Core		6

Credits **14**

Spring

BIOL 3060	Cell Structure & Function Laboratory	1
BIOL 3260	Biology of Plants & Fungi	4
BIOL 4070	Advanced Biological Chemistry	3
BIOL Elective		3
PHYS 1330 & PHYS 1340	College Physics II and College Physics II Laboratory	4

Credits **15**

Summer

CHEB 5110	Intro to Chemical Biology Research I	1
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Credits **1**

Year Four**Fall**

BIOL 4050	Molecular Technique Lab	2
BIOL 4980	Advanced Independent Study	1
BIOL 5700	Advanced Molecular Biology	3
CHEB 5630	Chemical Biology & Biotech	3
A&S Core		6

Credits **15**

Spring

BIOL 3010	Evolutionary Biology	3
BIOL 4980	Advanced Independent Study	1
CHEB 5120	Intro to Chemical Biology Research II	2
PPY 5410	Molecular Pharmacology	3
Elective or A&S Core (if needed)		6

Credits **15**

Summer

CHEB 5970	Research Topics	3
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Credits **3**

Year Five**Fall**

CHEB 5990	Thesis Research	3
Graduate Elective †		6
Submit Research Progress Report		
Credits		9

Spring

CHEM 5470	Principles of Medicinal Chemistry	3
CHEB 5990	Thesis Research	3
Submit and defend Master's Thesis		
Credits		6
Total Credits		140