

BIOCHEMISTRY

Students majoring in Biochemistry take a selection of chemistry and biology courses that apply the fundamentals of chemistry to living systems. Students in the major select one of the following concentrations: 1) Research and Industry, 2) Pre-Medical, or 3) Pre-Pharmacy. Biochemistry is a great choice if you are planning a career in the biochemical or pharmaceutical industry, or planning to pursue graduate studies in health care.

\$5,000

SCHMIDLAPP SCHOLARSHIP

Open to incoming freshmen majoring in biology, chemistry, computer science, or math. Based on academic talent and location. The deadline to apply is January 31. Download an application at msj.edu/aid-forms.

100%

CAREER OUTCOMES RATE

100% of Biomedical & Natural Sciences graduates were successfully employed, enrolled in graduate studies, or volunteering within six months of graduation. The knowledge rate for this survey was 80%.

HANDS-ON EXPERIENCE

Under the guidance of faculty, Biochemistry students participate in chemistry research. Students have the opportunity to present their work at regional professional meetings. Cooperative education provides realworld experience in industrial settings or research labs in Greater Cincinnati and has often led to full-time positions.

FURTHER YOUR EDUCATION

Students graduating with a
Biochemistry degree may choose
to pursue graduate degrees in
biochemistry or in health care fields
such as medicine, pharmacy, physical
therapy, or physician assistant studies.
Students may also enter the workforce
as a researcher in a biomedical lab.
Biochemistry majors work with their
academic advisor to identify a career
path that aligns with their goals.





SCAN TO FIND:

- Featured courses
- Program requirements and more!



MOUNT ST. JOSEPH UNIVERSITY®

SCHOOL OF ARTS & SCIENCES

Office of Admission 513-244-4531 | 800-654-9314 msj.edu | admission@msj.edu Eric Johnson, Ph.D.
Professor and Chair
Department of Biomedical and Natural Sciences
eric.johnson@msj.edu

BIOCHEMISTRY MAJOR - PRE-MEDICAL - BACHELOR OF SCIENCE

FIRST YEAR-SEMESTER #1 BIO 111 Principles of Biology I 4 BIO 111A Prin. of Bio Recitation 0 CHE 111 General Chemistry I 3 CHE 111 Gen. Chem. I Rec 0 COM 100/ ENG 101 3 SOC 103 Our Social World 3 SOC 103 Our Social World 3 SOC 103 Our Social World 3 CORE 115 Common Ground 3 SECOND YEAR-SEMESTER #1 CHE 211 Organic Chemistry I 3 CHE 211A Org. Chem I Lab 1 CHE 211A Org. Chem I Lab 1 CHE 212 Organic Chemistry II 3 CHE 200 Chem. Soph. Seminar 1 PHY 201 General Physics I Lab 1 CHE 200 Chem. Soph. Seminar 1 PHY 202 General Physics II 3 CHE 2325 Biochemistry I 3 CHE 325 Biochem. I Lab 1 COM 100/ENG 101 3 COre requirement 3 CHE 325 Biochem. I Lab 1 CHE 325 Biochem. I I Lab 1 CHE 325 Biochem. I I Lab 1 CHE 325 Biochem. I I Lab 1 CHE 315 Bio Chem. I I Lab 1 CHE 325 Biochem. I I Lab 1 CHE 315 Bio Chem. I I Lab 1 CHE 325 Biochem. I I Lab 1 CHE 325 Bioch				
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Elective 3	Core requirement		Elective	3
			Elective	3
#Students take CIIE 215/215 A Instrumental Analysis with lab	#84-1-4-4-1- CHE 215/215A I	-4		

#Students take CHE 315/315A Instrumental Analysis with lab Or CHE 360/360A Intermediate Inorganic Chem with lab

Students choose two from BIO 197 Human Anatomy & Physiology I; BIO 198 Human Anatomy & Physiology II; BIO 305 Microbiology; BIO 310 Cell Biology; BIO 320 Genetics (all with lab)

UNIVERSITY CORE						
COMMON GOOD						
CORE 115 Common Ground	Code COR					
Justice & the Common Good	Code JCG					
Ethics	Code CE					
Experiential Learning	Code EXP					
Core Capstone	Code CCP					
HUMANITIES						
Speech (COM 100)	Code C					
Writing (ENG 101)	Code C					
Literature (ENG)	Code CL					
Art or Music	Code CAM					
History	Code CH					
Religious Studies	Code CR					
Philosophy	Code CP					
SCIENCES						
Biology/Chemistry/Physics + Lab Code CN						
Mathematics	Code CMA					
SOC 103 Our Social World	Code CS					
Choose one discipline:						
ECO 212 Microeconomics	Code CEP					
PSY 103 Psychology	Code CEP					
NOTES						

Prerequisites:

Chemistry- College preparatory high school chemistry or the successful completion of a placement test.

Math-Three years of college preparatory high school mathematics including functions.

120 credit hours minimum needed to graduate

*Students must have an appropriate math placement before enrolling in MTH 174 and CHE 111.

Curriculum Guide does not replace advising by a faculty member within the Chemistry program

BIOCHEMISTRY MAJOR - PRE-PHARMACY - BACHELOR OF SCIENCE

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FIRST YEAR-SEMESTER #1 BIO 111 Principles of Biology I	4	FIRST YEAR- SEMESTER #2		UNIVERSITY CORE	
BIO 111A Prin. of Biology I Lab	0	CHE 112 General Chemistry II CHE 112A Gen. Chem II Lab	3 1	COMMON GOOI	
BIO 111R Prin. of Bio Recitation		CHE 112A Gen. Chem. II Rec	0	CORE 115 Common Ground	Code COR
		MTH 174 Statistics		Justice & the Common Good	Code JCG
CHE 111 General Chemistry I	3		3	Ethics	Code CE
CHE 111A Gen. Chem. I Lab		COM 100/ ENG 101		Experiential Learning	Code EXP
CHE 111R Gen. Chem. I Rec	0	SOC 103 Our Social World	3	Core Capstone	Code CCP
MTH 193 Calculus I	4	Core requirement	3	HUMANITIES	
PSY 103 Intro to Psychology	3			Speech (COM 100)	Code C
CORE 115 Common Ground	3			Writing (ENG 101)	Code C
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SECOND YEAR-SEMESTER	_	SECOND YEAR-SEMESTER		Art or Music	Code CAM
CHE 211 Organic Chemistry I	3	CHE 212 Organic Chemistry II	3	History	Code CH
CHE 211A Organic Chem I Lab	1	CHE 212A Organic Chem II Lab	1	Religious Studies	Code CR
PHY 201 General Physics I	3	CHE 200 Chem. Soph. Seminar	1	Philosophy	Code CP
PHY 201A Gen. Physics I Lab	1	PHY 202 General Physics II	3	SCIENCES	
CED 220 Foundations of		PHY 202A Gen. Physics II Lab	1	Biology/Chemistry/Physics + I	Lab Code CN
Professionalism	1	Core requirement	3	Mathematics	Code CMA
COM 100/ENG 101	3	Core requirement	3	SOC 103 Our Social World	Code CS
Core requirement	3				
THIRD YEAR-SEMESTER #	_	THIRD YEAR-SEMESTER #2		Choose one discipline:	
CHE 325 Biochemistry I	3	CHE 326 Biochemistry II	3	ECO 212 Microeconomics	Code CEP
CHE 325A Biochem. I Lab	1	CHE 326A Biochem. II Lab	1	PSY 103 Psychology	Code CEP
BIO 197 Human Anatomy &		CHE 300 Chem. Junior Seminar	1	Nomes	
Physiology I	4	BIO 198 Human Anatomy &		NOTES	
BIO 197A Human Anatomy &		Physiology II	4	Prerequisites:	
Physiology I Lab	0	BIO 198A Human Anatomy &		Chemistry- College preparatory	v high school
Core requirement	3	Physiology II Lab	0	chemistry or the successful cor	
Core requirement	3	ENG 300 Advanced Composition	3	placement test.	inpiction of a
Core requirement	3	Core requirement	3	Math- Three years of college p	reparatory
				high school mathematics include	
FOURTH YEAR-SEMESTER	#1	FOURTH YEAR-SEMESTER	<u>t #2</u>	functions.	amg
CHE 314 Inter. Analytical Chem	3	CHE 315 [#] or 360 or elective	3	Tunetions.	
CHE 314A Inter. Analytical		CHE 315A# or 360A or elective	1	120 credit hours minimum nee	ded to
Chem Lab	1	CHE 400 Chem. Seminar &		graduate	ded to
BIO 215 Microbiology or Elective	e 3/4	Capstone	1	graduate	
BIO 215 Microbiology Lab	0	BIO 305 Microbiology or Elective	3/4	*Students must have an approp	vriate math
Core Capstone	3	BIO 305A Microbiology Lab	0	placement before enrolling in N	
				CHE 111.	viiii 175 and
#Students take CHE 315/215A In-	ctrumo	atal Analysis with lab			
#Students take CHE 315/315A Instrumental Analysis with lab Or CHE 360/360A Intermediate Inorganic Chem with lab **Curriculum Guide does not replace				replace	
Of CITE 300/300A intermediate I	norgani	c Chem with lab		advising by a faculty member v	
				Chemistry program**	
				Chemisary program	

BIOCHEMISTRY MAJOR - RESEARCH INDUSTRY - BACHELOR OF SCIENCE

FIRST YEAR-SEMESTER #1		FIRST YEAR- SEMESTER	<u>#2</u>	UNIVERSITY CO	RE
BIO 111 Principles of Biology I	4	CHE 112 General Chemistry II	3	COMMON GOOL)
BIO 111A Prin. of Biology I Lab	0	CHE 112A Gen. Chem II Lab	1	CORE 115 Common Ground	Code COR
BIO 111R Prin. of Bio I Recitatio	n 0	CHE 112R Gen. Chem. II Rec	0	Justice & the Common Good	Code JCG
CHE 111 General Chemistry I	3	MTH 194 Calculus II	4	Ethics	Code CE
CHE 111A Gen. Chem. I Lab	1	COM 100/ ENG 101	3	Experiential Learning	Code EXP
CHE 111R Gen. Chem. I Rec	0	SOC 103 Our Social World	3	Core Capstone	Code CCP
MTH 193 Calculus I	4	Core requirement	3	HUMANITIES	
CORE 115 Common Ground	3			Speech (COM 100)	Code C
SECOND YEAR-SEMESTER	#1	SECOND YEAR-SEMESTER	<u>t #2</u>	Writing (ENG 101)	Code C
CHE 211 Organic Chemistry I	3	CHE 212 Organic Chemistry II	3	Literature (ENG)	Code CL
CHE 211A Organic Chem I Lab	1	CHE 212A Organic Chem II Lab	1	Art or Music	Code CAM
PHY 201 General Physics I	3	CHE 200 Chem. Soph. Seminar	1	History	Code CH
PHY 201A Gen. Physics I Lab	1	PHY 202 General Physics II	3	Religious Studies	Code CR
CED 220 Foundations of		PHY 202A Gen. Physics II Lab	1	Philosophy	Code CP
Professionalism	1	Core requirement	3	SCIENCES	
COM 100/ENG 101	3	Core requirement	3	Biology/Chemistry/Physics + I	ab Code CN
Core requirement	3			Mathematics	Code CMA
				SOC 103 Our Social World	Code CS
THIRD YEAR-SEMESTER #	<u>#1</u>	THIRD YEAR-SEMESTER	<u>#2</u>		
CHE 350 Physical Chemistry I	3	CHE 326 Biochemistry II	3	Choose one discipli	ne:
CHE 350A Phys. Chem I Lab	1	CHE 326A Biochemistry II Lab	1	ECO 212 Microeconomics	Code CEP
CHE 325 Biochemistry I	3	CHE 355# or elective	3	PSY 103 Psychology	Code CEP
CHE 325A Biochemistry I Lab	1	CHE 355A#	1		
Core requirement	3	CHE 300 Chem. Junior Seminar	1	<u>NOTES</u>	
Core requirement	3	BIO 305/305A or 310/310A		Prerequisites:	
Core requirement	3	or 320/320A	4	Chemistry- College preparatory	z high school
		Core requirement	3	chemistry or the successful con	
				placement test.	apiedon or a
FOURTH YEAR-SEMESTER	#1	FOURTH YEAR-SEMESTER #2		Math- Three years of college preparatory	
CHE 314 Inter. Analytical Chem	3	CHE 315# or 360 or elective	3	high school mathematics include	
CHE 314A Inter. Analytical		CHE 315A# or 360A or elective	1	functions.	5
Chem Lab	1	CHE 390 Research Problems		Tuniono.	
Core requirement	3	in Chemistry	1	120 credit hours minimum need	ded to
Core Capstone	3	CHE 400 Chem. Seminar &		graduate	
Elective	3	Capstone	1	gradient	
		BIO 305/305A or 310/310A		*Students must have an approp	riate math
		or 320/320A	4	placement before enrolling in N	
#Students take CHE 315/315A In:	strume	ntal Analysis with lab or		CHE 111.	
CHE 355/355A Physical Chem. II					
CHE 360/360A Int. Inorganic Chem. with lab			**Curriculum Guide does not replace		
l library inc. morganic en	-111. WIL			advising by a faculty member v	
Students choose two from BIO 30	5 Micr	obiology; BIO 320 Genetics; BIO 31	0/310A	Chemistry program**	
Cell Biology with lab		osiologj, bio 520 Genetics, bio 51	0.01011		
Con Blology with his					

Approved by EJ on 04.03.2025



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