Archives AY 2019-2020 AY 2020-2021

CSCU Biochemistry Transfer Pathway 2021-2022

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5/26/21 No substantive changes

Program Outcomes:

Students completing the CSCU Biochemistry Pathway and earning an Associate's Degree will be able to:

1. Understand and apply a chemical knowledge base to biological phenomena, including theories of chemical bonding and reactivity.

2. Communicate scientific knowledge in written and verbal formats.

3. Demonstrate technical competencies in the application of laboratory skills and safety.

4. Interpret, use and apply scientific literature in the context of biochemical problems.

PROPOSED PATHW	/AY
CSCU Pathway Transfer A.A. Degree:	Biochemistry Studies

1	FRAMEWORK30		/
2	Section A: Common Designated		
	Competencies		
3	Written Communication I	ENG 101 Composition	3 credits
4	Written Communication II	General Education Elective	3 credits
5	Scientific Reasoning	CHE 121 General Chemistry I	4 credits
6	Scientific Knowledge & Understanding	CHE 122 General Chemistry II	4 credits
7	Quantitative Reasoning	MAT 186 Pre-Calculus	4 credits
8	Historical Knowledge & Understanding	General Education Elective	3 credits
9	Social Phenomena	General Education Elective	3 credits
10	Aesthetic Dimensions	General Education Elective	3 credits
11	Section B: Campus Designated	\sim	
	Competencies		
12	Competency 1	General Education Elective	3 credits
13	Competency 2	General Education Elective	3 credits
14	Framework30 Total		33 credits
15	PATHWAY30		
16	Major Program Requirements		
17	BIO 121	General Biology I	4 credits
18	BIO 235	Microbiology	4 credits
19	CHE 211	Organic Chemistry I	4 credits
20	CHE 212	Organic Chemistry II	4 credits
21	MAT 254	Calculus I	4 credits
22	PHY 221	Calculus-Based Physics I	4 credits
23	,		
24	Unrestricted Electives		3 credits
25	BIO 122 General Biology II		
	OR		
	PHY 222 Calculus-Based Physics II		
	recommended for this open elective with		
	the following considerations:		
	PHY II is required at CCSU, ECSU, WCSU		
	BIO II is required at WCSU		
	If the student completes both sequences		
	at the community college and transfers		

26	Pathway30 Total	27 credits
	other General Education requirements.	
	some CSUs. They may also complete	
	beginning work on minor requirements of	
	school for CCSU, ECSU and WCSU or	
	requirements not already met in high	
	completing work on foreign language	
	Students should consider beginning or	
	elective for PHY II or BIO II.	
	to SCSU may decide not to use this open	
	Students who know they are transferring	
	WCSU after transfer.	
	have 4 fewer credits to complete at	
	accepted at WCSU and the student will	
	to WCSU, both sequences will be	

27 [Discipline Name] Pathway Total

Students who are required to complete developmental coursework or who place below the required entry level of math for their program may not be able to complete their pathway degree in 60 credits/contact hours.

60 credits*

3

Template 1

Central Connecticut State University

Complete four-year degree with articulation of community college degree to four-year degree

Biochemistry, B.S. – General Track

There is no minor required for this program.

2 Credits	/
	Credits
³ Framework30**	
4 General Education Requirements	
5 Competency:	
6 Section A	
7 Written I English 101 3 English 110	3
8 Written II Gen Ed 3 Skill Area I – Communicatio	on 3
9 Scientific Reasoning CHE 121 General 4 CHEM 161/162 General Chemistry I	nemistry 4
10 Scientific Knowledge CHE 122 General 4 CHEM 200/201 Foundation Chemistry II Analytical Chemistry Analytical Chemistry Analytical Chemistry	ns of 4
11 Quantitative MAT 186 Pre-Calculus 4 MATH 119 Pre-Calculus wi Trigonometry Trigonometry Trigonometry	ith 4
12 Historical Knowledge Gen Ed* 3 Study Area II – History	3
13 Social Phenomena Gen Ed 3 Study Area II – Social Scien	nce 3
14 Aesthetic Dimensions Gen Ed 3 Study Area I – Arts and Humanities	3
15 Section B	
16 Competency: Gen Ed 3 Skill Area IV – University Requirement 3 State	3
17 Competency: Gen Ed 3 Study Area III – Behavioral Sciences	3
18 Framework30 Credits (30-31):	33
¹⁹ Pathway30	
20 Additional General Education Courses	
21 Study Area I – Literature	3
22 Study Area I – Arts and Humanities	3
23 Study Area II – Social Scien	nces 3
24 Study Area III – Behavioral Sciences	3
	Comp Sci 4

26				Skill Aroa III – Eoroign Languago	6
20				Skill Area III – Foreign Language Proficiency:	D
				See requirements <u>here</u> . If the	
				requirement has been met in	
				whole or in part, general	
				education and open elective	
				credits will adjust accordingly.	
27	General Education Credits:				55
28		Dro	oran	n Courses	33
29	iviajoi		- <u>6</u> 1411	BMS 102/103 Introduction to	4
29				Biomolecular Science	4
30				BMS 201 Principles of Cell and	4
30				Molecular Biology	4
31				BMS 190 and 290 Introduction to	1
21				Research I & II	1
32	BIO 235 Microbiology		4	BMS 316 Microbiology	4
33	BIO 255 WILLODIOIOgy		4	BMS 390 or CHEM 238	4
55				Independent Research	T
34				BMS 491 or CHEM 438 Advanced	1
54				Independent Research	L L
25	CUE 211 Organia Chamistry I				4
35	CHE 211 Organic Chemistry I		4	CHEM 210/211 Organic Chemistry	4
36	CHE 212 Organic Chemistry II	r	4	CHEM 212/213 Organic Chemistry	4
			$\boldsymbol{\lambda}$	11	
37	\sim			CHEM 260 Foundations of	3
	\sim			Inorganic Chemistry	
38				CHEM 316 Spectrometric	3
				identification of Organic	
				Compounds	
39				CHEM 320 Biophysical Chemistry	3
40				CHEM 332 Chemical Literature	1
41				CHEM 432 Chemistry Seminar	1
42				Select 6-8 credits from the	6-8
				following:	
				BMS 306 Genetics (3)	
				BMS 307 Genomics (4)	
				BMS 311 Cell Biology (4)	
				BMS 415 Advanced Exploration in	
				Cell, Molecular, and Physiological	
				Biology (3)	
				BMS 490 Topics in Biomolecular	
				Sciences (1-4)	
				BMS 495 Capstone in Molecular	
				Biology (4)	
				BMS 562 Advanced	
				Developmental Biology (3)	
				BMS 570 Advanced Genetics (3)	

			CHEM 456 Toxicology (3)	
43			Select one of the following:	3
			BMS 496 Capstone in Cellular	
			Metabolism and Energetics	
			CHEM 354 Foundations of	
			Biochemistry	
44			CHEM 455 Biochemistry Lab	1
45			CHEM 458 Advanced	3
			Biochemistry	
46	PHY 221 Calculus-Based Physics	4	PHYS 125 University Physics I	4
			Select one of the following:	4
			PHYS 122 General Physics II	
			PHYS 126 University Physics II	
47	Program Course Credits:	16		55-57
48	Minor Course Credits:			
49	Ο	oen Elec	tives	
50	Students who have fulfilled foreign		\mathbf{O}	
	language requirements in high school			
	or who use open elective credits at the			
	community college to fulfill foreign			
	language and/or minor requirements		\sim	
	will end up with more open elective			
	credits at the CCSU.		· ·	
51	Open Elective credits:	3		4-6
52	BIO 121 General Biology I	4	BIO 121 General Biology I	4
53				
54	Total Credits at the Community College	60	Total Credits for the 4-Year	120

Template 1

Central Connecticut State University

Complete four-year degree with articulation of community college degree to four-year degree

Biochemistry, B.S. – American Chemical Society Certified Track

There is no minor required for this program.

1	Co	ommunity Colleges*:		CCSU			
2			Credits		Credits		
3	Framework30**						
4		General Education Requirements					
5	Competency:						
6	Section A			\sim			
7	Written I	English 101	3	English 110	3		
8	Written II	Gen Ed	3	Skill Area I – Communication	3		
9	Scientific Reasoning	CHE 121 General Chemistry I	4	CHEM 161/162 General Chemistry	4		
10	Scientific Knowledge	CHE 122 General Chemistry II	4	CHEM 200/201 Foundations of Analytical Chemistry	4		
11	Quantitative	MAT 186 Pre-Calculus	4	MATH 119 Pre-Calculus with Trigonometry	4		
12	Historical Knowledge	Gen Ed*	3	Study Area II – History	3		
13	Social Phenomena	Gen Ed	3	Study Area II – Social Science	3		
14	Aesthetic Dimensions	Gen Ed	3	Study Area I – Arts and Humanities	3		
15	Section B						
16	Competency:	Gen Ed	3	Skill Area IV – University Requirement	3		
17	Competency:	Gen Ed	3	Study Area III – Behavioral Sciences	3		
18	Framework30 C	redits (30-31):			33		
19			Pathway	/30			
20		Additional Ge	neral Ed	lucation Courses			
21				Study Area I – Literature	3		
22				Study Area I – Arts and Humanities	3		
23				Study Area II – Social Sciences	3		
24				Study Area III – Behavioral Sciences	3		
25	MAT 254 Calculu	ıs l		Skill Area II – Math/Stat/ Comp Sci	4		

53	0.	oen Elec	tives	
52	Minor Course Credits: a minor is not requ	uired for th	iis program.	
51	Program Course Credits:	16		57
50				
49			PHYS 126 University Physics II	4
48	PHY 221 Calculus-Based Physics	4	PHYS 125 University Physics I	4
.,			Biochemistry	
47			CHEM 458 Advanced	3
45			CHEM 455 Biochemistry Lab	1
45			CHEM 432 Chemistry Seminar	1
44			CHEM 354 Foundations of Biochemistry	3
43			CHEM 402 Instrumental Analysis	4
42	· · · · · · · · · · · · · · · · · · ·		CHEM 332 Chemical Literature	1
41	/		CHEM 323 Physical Chemistry Lab	1
40			CHEM 322 Quantum Chemistry	3
39			CHEM 320 Biophysical Chemistry	3
			Compounds	
			identification of Organic	
38			CHEM 316 Spectrometric	3
)	Inorganic Chemistry	
37			CHEM 260 Foundations of	3
-		N X		
36	CHE 212 Organic Chemistry II		CHEM 212/213 Organic Chemistry	4
35	CHE 211 Organic Chemistry I	4	CHEM 210/211 Organic Chemistry	4
			Independent Research	
34			BMS 491 or CHEM 438 Advanced	1
			Independent Research	
33			BMS 390 or CHEM 238	1
32	BIO 235 Microbiology	4	BMS 316 Microbiology	4
			Research I & II	
31			BMS 190 and 290 Introduction to	1
			Molecular Biology	
30			BMS 201 Principles of Cell and	4
29			BMS 102/103 Introduction to Biomolecular Science	4
	Major	Progran	n Courses	
27 28	General Education Credits:			55
27	Concerct Education Creditor		credits will adjust accordingly.	
			education and open elective	
			whole or in part, general	
			requirement has been met in	
			See requirements <u>here</u> . If the	
			Proficiency:	
26			Skill Area III – Foreign Language	6

54	Students who have fulfilled foreign language requirements in high school or who use open elective credits at the community college to fulfill foreign language and/or minor requirements will end up with more open elective credits at the CCSU.			
55	Open Elective credits:	3		4
56	BIO 121 General Biology I	4	BIO 121 General Biology I	4
57				
58	Total Credits at the Community College	60	Total Credits for the 4-Year Degree	120

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Template 1

Eastern Connecticut State University

Complete four-year degree with articulation of community college degree to four-year degree

Biochemistry, B.S.

There are no additional requirements for admission to this program.

1	C	ommunity Colleges*:		ECSU		
2			Credits		Credits	
3	Framework30**					
4		General Education Requirements				
5	Competency:					
6	Section A					
7	Written I	English 101	3	T1 College Writing, Literature and Thought	3	
8	Written II	Gen Ed	3	T1 College Writing, Literature and Thought	3	
9	Scientific Reasoning	CHE 121 General Chemistry I	4	CHE 210/212 General Chemistry I with Lab	4	
10	Scientific Knowledge	CHE 122 General Chemistry II	4	CHE 211/213 General Chemistry II with Lab	4	
11	Quantitative	MAT 186 Pre-Calculus	4	MAT 130 Pre-Calculus Mathematics	4	
12	Historical Knowledge	Gen Ed*	3	T1 Historical Perspectives	3	
13	Social Phenomena	Gen Ed	3	T1 Social Sciences	3	
14	Aesthetic Dimensions	Gen Ed	3	T1 Arts in Context	3	
15	Section B					
16	Competency:	Gen Ed	3	T1 FYI 100	3	
17	Competency:	Gen Ed	3	T1 Health and Wellness	3	
18	Framework30 C	redits (30-31):			33	
19		Р	athway	30		
20		Additional Ger	neral Ed	ucation Courses		
21				T2 Cultural Perspectives	3	
22				T2 Individuals and Societies	3	
23				T2 Creative Expressions	3	
24				T2 Applied Information Technologies	3	
25				Tier 3 Capstone (Must be taken at ECSU)	3	

26			Foreign Language Proficiency:	6
			See requirements here. If the	
			requirement has been met in	
			whole or in part, general	
			education and open elective	
			credits will adjust accordingly.	
27	General Education Credits:			54
28	Major F	Program	Courses	
29	BIO 121 General Biology I	4	BIO 120 Organismal Biology with	4
			Lab	/
30			BIO 220 Cell Biology with Lab	4
31			BIO 230 General Genetics with	4
			Lab	
32	CHE 211 Organic Chemistry I	4	CHE 216 Organic Chemistry I	4
			with Lab	
33	CHE 212 Organic Chemistry II	4	CHE 217 Organic Chemistry II	4
			with Lab	
34			CHE 316/317 Biochemistry I with	4
			Lab	
35			CHE 318/319 Biochemistry II	4
			with Lab	
36			CHE 323 Physical Biochemistry	3
37			CHE 425 Physical Biochemistry	3
	\sim		Techniques	
38	\sim	V	CHE 425 Chemical	4
	\sim		Instrumentation with Lab	
39			MAT 244 Calculus II with	4
			Technology	
40	PHY 221 Calculus-Based Physics	4	PHY 208 Physics with Calculus I	4
			with Lab	
41			PHY 205 Physics II with Lab	4
43	Program Course Credits:	16		50
44	Ор	en Elect	ives	
45	BIO 235 Microbiology	4	BIO 334 General Microbiology	4
			with Lab	
46	MAT 254 Calculus I	4	MAT 243 Calculus I	4
47	Students who have fulfilled foreign			
	language requirements in high school or			
	language requirements in high school or who use open elective credits at the			
	who use open elective credits at the			
	who use open elective credits at the community college to fulfill foreign			
	who use open elective credits at the community college to fulfill foreign language requirements will end up with			
48	who use open elective credits at the community college to fulfill foreign language requirements will end up with up to three open elective credits at ECSU. Open Elective credits:	3		8
48 49	who use open elective credits at the community college to fulfill foreign language requirements will end up with up to three open elective credits at ECSU.	3 60	Total Credits for the 4-Year	8 120

Template 1

Southern Connecticut State University

Complete four-year degree with articulation of community college degree to four-year degree

Chemistry, B.S. – Concentration: Biochemistry

Students must complete 2 "W" courses at SCSU.

1	C	ommunity Colleges*:		SCSU	
2			Credits		Credits
3		Fran	nework	30**	
4		General Edu	cation F	Requirements	
5	Competency:			\mathbf{O}	
6	Section A				
7	Written I	English 101	3	FYE	3
8	Written II	Gen Ed	3	Written Communication	3
9	Scientific Reasoning	CHE 121 General	4	Natural World 1 – Physical	4
		Chemistry I	N //	Realm: CHE 120 General	
				Chemistry I	
10	Scientific Knowledge	CHE 122 General	4	Natural World II – Life and	4
		Chemistry II		Environment: CHE 121 General	
		$\wedge \vee$		Chemistry II	
11	Quantitative	MAT 186 Pre-Calculus	4	Quantitative Reasoning: MAT	4
				122 Pre-Calculus	
12	Historical Knowledge	Gen Ed*	3	Time and Place	3
13	Social Phenomena	Gen Ed 👗	3	Social structure, Conflict,	3
				Consensus	
14	Aesthetic Dimensions	Gen Ed	3	Cultural Expressions	3
15	Section B				
16	Competency:	Gen Ed	3	Critical Thinking	3
17	Competency:	Gen Ed	3	Tech Fluency	3
18	Framework30 C	redits (30-31):			33
19		Pa	athway	30	
20		Additional Gen	eral Ed	ucation Courses	
21				Select three of the following four:	9
22				American Experience	(3)
23				Creative Drive	(3)
24				Global Awareness	(3)
25				Mind and Body	(3)
26				Must be taken at SCSU:	

27			Tier 3 Connections Capstone	0
			CHE 301 The Preparation of	
			Scientific Documents for	
			Chemistry	
			CHE 445 Chemical Hazards and	
			Laboratory Safety	
			CHE 496 Chemistry Seminar	
			(See lines 33, 36 and 40)	
28	General Education Credits:			42
29	Major P	rogram	Courses	/
30			CHE 240 Analytical Chemistry	4
31	CHE 211 Organic Chemistry I	4	CHE 260 Organic Chemistry I	4
32	CHE 212 Organic Chemistry II	4	CHE 260 Organic Chemistry II	4
33			CHE 301 The Preparation of	1
			Scientific Documents for	
			Chemistry	
34			CHE 370 Physical Chemistry I	3
35			CHE 435 Inorganic Chemistry I	3
36			CHE 445 Chemical Hazards and	1
			Laboratory Safety	
37			CHE 450 Biochemistry I	4
38			CHE 451 Biochemistry II	4
39			Select one of the following:	3
		Y	CHE 456 Medicinal Chemistry	
	\frown		CHE 458 Drug Discovery	
40	\sim	•	CHE 496 Chemistry Seminar	1
41			Select one additional CHE course	3-4
			at 300-level or above	
42	BIO 121 General Biology	4	BIO 102 Biology I	4
43			BIO 103 Biology II	4
44	BIO 235 Microbiology	4	Select three BIO courses at 200-	10-12
			level or above	
45	MAT 254 Calculus I	4	MAT 150 Calculus I	4
46	PHY 221 Calculus0Based Physics	4	PHY 230 Physics for Scientists	4
			and Engineers	
47	Program Course Credits:	24		61-64
48	Оре	en Elect	ives	
49	Open Elective credits:	3		14-17
50	Total Credits at the Community College	60	Total Credits for the 4-Year	120
			Degree	

Template 1

Western Connecticut State University

Complete four-year degree with articulation of community college degree to four-year degree

Chemistry, Biochemistry Option B.S. Non-ACS approved

There are no additional requirements for admission to this program.

1	C	ommunity Colleges*:		WCSU	
2			Credits		Credits
3		Fran	nework	:30**	
4		General Edu	cation I	Requirements	
5	Competency:				
6	Section A				
7	Written I	English 101	3	Writing Intensive I	3
8	Written II	Gen Ed	3	Writing Intensive II	3
9	Scientific Reasoning	CHE 121 General Chemistry I	4	Scientific Inquiry: CHE 110 General Chemistry I	4
10	Scientific Knowledge	CHE 122 General Chemistry II	4	General Education Elective / Second Exposure to Scientific Inquiry: CHE 111 General Chemistry II	4
11	Quantitative	MAT 186 Pre-Calculus	4	Quantitative Reasoning: MAT 133 Pre-Calculus (one credit goes to Open Electives: see line 49)	3
12	Historical Knowledge	Gen Ed*	3	Critical Thinking	3
13	Social Phenomena	Gen Ed	3	Information Literacy	3
14	Aesthetic Dimensions	Gen Ed	3	Creative Process	3
15	Section B				
16	Competency:	Gen Ed	3	Oral Communication	3
17	Competency:	Gen Ed	3	General Education Elective	3
18	Framework30 C	redits (30-31):			32
19		Р	athway	30	
20		Additional Ger	neral Ed	ucation Courses	
	long learning in complete a mini	and through 10 competenc	ies. Part I heir majo	riculum: Part I (Foundations) addre. I (Explorations) requires students to r. Students must also repeat three ation.	5

In the Framework30 portion of the transfer degree, students who complete of TAP degree will receive credit for having met 9 completencies in Foundations, including at least one repeat (Scientific Inquiry) and 30 of the 40 credits of Explorations. In this pathway, students will have completed two repeats, one in Scientific Inquiry and one in Quantitative Reasoning, and will have met 38 of the Explorations 40 credits. 21 MAT 254 Calculus I 4 General Education Elective / Second Exposure to Quantitative Reasoning. MAT 181 Calculus I 4 22 BIO 121 General Biology I 4 General Education Elective: BIO 4 4 23 Intercultural Competence 3 3 24 Health and Wellness 3 25 A foreign language is required 3 26 Must be taken at WCSU: at Credits are will competence 3 27 General Education Elective / Second Exposure 3 credits are will competence 3 27 General Education Elective / Second Exposure 3 credits are will competence 3 28 Must be taken at WCSU: at competence 3 3 credits are will competence 3 29 Cultural Competence Cultural Competence 0 - 3 3 29 <		In the Framework20 portion of the transfer	degree s	tudents who complete a TAP deared	o will
(Scientific Inquiry), and 30 of the 40 credits of Explorations. In this pathway, students will have completed two repeats, one in Scientific Inquiry and one in Quantitative Reasoning, and will have met 38 of the Explorations 40 credits. 4 21 MAT 254 Calculus I 4 General Education Elective / Second Exposure to Quantitative Reasoning: MAT 181 Calculus I 4 22 BIO 121 General Biology I 4 General Education Elective: BIO 103 General Biology I 4 23 Intercultural Competence 3 24 Health and Wellness 3 25 A foreign language is required for this major. Follow this link and click on the program sheet for requirements. Three credits of foreign language may count as fulfilling Intercultural Competence 3 26 Must be taken at WCSU: 3 27 General Education Elective / second Exposure 3 28 Writing Intensive III - embedded in a major course 0 29 Culminating Gen Ed Experience - may be satisfied by a major capstone 0 31 Major Program Courses 3 32 CHE 200 Granit/clal Chemistry Lecture 3 34 CHE 211 Organic Chemistry II 4 35 CHE 210 Organic Chemistry II 4 36 CHE 210 Org					
In this pathway, students will have completed two repeats, one in Scientific Inquiry and one in Quantitative Reasoning, and will have met 38 of the Explorations 40 credits. 21 MAT 254 Calculus I 4 General Education Elective / Second Exposure to Quantitative Reasoning: MAT 181 Calculus I 4 22 BIO 121 General Biology I 4 General Education Elective: BIO 103 General Biology I 4 23 Intercultural Competence 3 24 Health and Wellness 3 25 A foreign language is required for this major. Follow this link and click on the program sheet for requirements. Three credits are different intercultural Competence are 26 Must be taken at WCSU: 3 27 General Education Elective / Second Exposure 3 28 Writing Intercultural Competence 3 29 Cultural Cultural Competence 3 29 Culta Sified by a major capstone 0 31 Major Program Curses 3 32 CHE 205 Analytical Chemistry Lab 3 33 CHE 2010 Organic Chemistry II 4 4 CHE 200 Chemistry II 4					11
Quantitative Reasoning, and will have met 38 of the Explorations 40 credits. 21 MAT 254 Calculus I 4 General Education Elective / Second Exposure to Quantitative Reasoning: MAT 181 Calculus I 4 22 BIO 121 General Biology I 4 General Education Elective: BIO 103 General Biology I 4 23 Intercultural Competence 3 24 Health and Wellness 3 25 A foreign language is required for this major. Follow this Jink and click on the program sheet for requirements. Three credits of foreign language may count as fulfilling intercultural Competence 3 26 Must be taken at WCSU: 3 27 General Education Elective / second Exposure 3 28 Writing Intensive III - embedded in a major course 0 29 Cullingther Program Major Program Curregian 52 31 Major Program Curregian 52 33 CHE 205 Analytical Chemistry Lecture 3 33 CHE 210 Organic Chemistry II 4 34 CHE 211 Organic Chemistry III 4 36 CHE 212 Organic Chemistry III 4 37 CHE 200 Physical Chemistry II 4			• •		ne in
21 MAT 254 Calculus I 4 General Education Elective / Second Exposure to Quantitative Reasoning: MAT 181 Calculus I 4 22 BIO 121 General Biology I 4 General Education Elective: BIO 103 General Biology I 4 23 Intercultural Competence 3 24 Health and Wellness 3 25 A foreign language is required for this major. Follow this Jink and click on the program sheet for requirements. Three credits are of foreign language may count as fulfilling Intercultural Competence 3 26 Must be taken at WCSU: 3 27 General Education Elective / second Exposure 3 28 Writing Intensive III – embedded in a major course 0 29 Cultural Major Program Capstone 0 31 Major Program CHE 205 Analytical Chemistry Lecture 3 33 CHE 211 Organic Chemistry II 4 34 CHE 211 Organic Chemistry III 4 37 CHE 212 Organic Chemistry III 4					
22 BIO 121 General Biology I 4 General Education Elective: BIO 4 23 Intercultural Competence 3 24 Health and Wellness 3 25 A foreign language is required for this major. Follow this link and click on the program sheet for requirements, Three credits of foreign language may count as fulfilling Intercultural Competence 3 26 Must be taken at WCSU: - 27 General Education Elective / Second Exposure 3 28 Witting Intercultural Competence 3 29 General Education Elective / Second Exposure 3 29 Culturating General Education Elective / Second Exposure 3 30 General Education Credits: 41 52 31 Major Program Courses 3 3 33 CHE 205 Analytical Chemistry I 4 33 CHE 211 Organic Chemistry II 4 34 CHE 212 Organic Chemistry II 4 35 CHE 212 Organic Chemistry II 4	21				4
Image: Constraint of the second sec	21		-	-	-
22 BIO 121 General Biology I 4 General Education Elective: BIO 103 General Biology I 4 23 Intercultural Competence 3 24 Health and Wellness 3 25 A foreign language is required for this major. Follow this link and click on the program sheet for requirements. Three credits are credits of foreign language may count as fulfilling Intercultural Competence 3 26 Must be taken at WCSU: 0 27 General Education Elective / second Exposure 3 28 Writing Intensive III – embedded in a major course 0 29 Culminating Gen Ed Experience – may be satisfied by a major capstone 0 31 Major Program Major Program Lecture 3 32 CHE 205 Analytical Chemistry Lecture 3 33 CHE 205 Analytical Chemistry Lecture 3 34 CHE 211 Organic Chemistry II 4 CHE 200 Organic Chemistry II 4 34 CHE 211 Organic Chemistry II 4 CHE 201 Organic Chemistry II 4 36 CHE 211 Organic Chemistry II 4 CHE 201 Organic Chemistry II 4 37 CHE 211 Organic Chemistry II 4 CHE 211 Organic Chemistry II					
23 103 General Biology 1 24 Intercultural Competence 3 25 Health and Wellness 3 26 And Cick on the program sheet for requirements. Three credits of foreign language may count as fulfilling Intercultural Competence 103 General Education Elective / Second Exposure 103 General Education Elective / Second Exposure 26 Must be taken at WCSU: 103 General Education Credits: 103 General Education Credits: 27 General Education Credits: 103 General Education Credits: 103 General Education Credits: 28 Writing Intensive III - embedded in a major course 0 General Education Credits: 0 General Education Elective / Second Exposure 3 General Education Credits: 30 General Education Credits: 41 52 31 Major Program Courses 3 Lecture 3 Lecture 33 CHE 205 Analytical Chemistry Lab 3 Leture 3 Lecture 4 Head CHE 211 Organic Chemistry II 4 Head CHE 211 Organic Chemistry II 4 Head CHE 200 Physical Chemistry II 34 CHE 212 Organic Chemistry II 4 CHE 200 Physical Chemistry II 4	22	BIO 121 General Biology I	1		1
23 Intercultural Competence 3 24 Health and Wellness 3 25 A foreign language is required for this major. Follow this link and click on the program sheet for requirements. Three credits of foreign language may count as fulfilling Intercultural Competence 3 26 Must be taken at WCSU: - 27 General Education Elexive / Second Exposure 3 28 Writing Intersity III – embedded in a major course 0 29 Cullminating Gen Ed Experience - may be satisfied by a major capstone 0 31 Major Program Curreat 52 33 CHE 205 Analytical Chemistry Lecture 3 33 CHE 201 Organic Chemistry I 4 4 24 34 CHE 211 Organic Chemistry II 4 24 37 CHE 201 Organic Chemistry II 4	22	bio 121 General biology i	-		-
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25 A foreign language is required for this major. Follow this link and click on the program sheet for requirements, Three credits of foreign language may count as fulfilling Intercultural Competence 3 26 Must be taken at WCSU: at WCSU, 3 27 General Education Elective / Second Exposure 3 28 Writing Intensive III – embedded in a major course 0 29 Culliminating Gen Ed Experience - may be satisfied by a major capstone 0 31 Major Program Cultural Competence 52 31 Major Program Culturel 3 32 CHE 205 Analytical Chemistry Lab 3 33 CHE 211 Organic Chemistry II 4 34 CHE 212 Organic Chemistry II 4 35 CHE 212 Organic Chemistry II 4 36 CHE 210 Organic Chemistry II 4					
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26Must be taken at WCSU:27General Education Elective / Second Exposure328Writing Intensive III – embedded in a major course029Culminating Gen Ed Experience - may be satisfied by a major capstone030General Education Credits:415231Major Program Courses5232CHE 205 Analytical Chemistry Lecture333CHE 211 Organic Chemistry II434CHE 212 Organic Chemistry II435CHE 212 Organic Chemistry II436CHE 300 Physical Chemistry I437CHE 301 Physical Chemistry II4			V		Com
27General Education Elective / Second Exposure328Writing Intensive III - embedded in a major course029Culminating Gen Ed Experience - may be satisfied by a major capstone030General Education Credits:415231Major Program Courses5232CHE 205 Analytical Chemistry Lecture333CHE 211 Organic Chemistry II434CHE 211 Organic Chemistry III435CHE 212 Organic Chemistry III436CHE 300 Physical Chemistry II437CHE 301 Physical Chemistry II4		\sim			petence
28Second Exposure28Writing Intensive III – embedded in a major course029Culminating Gen Ed Experience – may be satisfied by a major capstone030General Education Credits:415231Major Program Courses5232CHE 205 Analytical Chemistry Lecture333CHE 211 Organic Chemistry I434CHE 211 Organic Chemistry II435CHE 212 Organic Chemistry II436CHE 300 Physical Chemistry I437CHE 301 Physical Chemistry II4	26			Must be taken at WCSU:	
28Writing Intensive III – embedded in a major course029Culminating Gen Ed Experience – may be satisfied by a major capstone030General Education Credits:415231Major Program Courses5232CHE 205 Analytical Chemistry Lecture333CHE 210 Granic Chemistry I Lab434CHE 211 Organic Chemistry II4CHE 210 Organic Chemistry II 435CHE 212 Organic Chemistry II436CHE 300 Physical Chemistry I 4437CHE 301 Physical Chemistry II4	27			General Education Elective /	3
Image: Second		· · · · · · · · · · · · · · · · · · ·		Second Exposure	
29Culminating Gen Ed Experience - may be satisfied by a major capstone030General Education Credits:415231Major Program Courses5232CHE 205 Analytical Chemistry Lecture333CHE 206 Analytical Chemistry Lab234CHE 211 Organic Chemistry II435CHE 212 Organic Chemistry III436CHE 300 Physical Chemistry I437CHE 301 Physical Chemistry II4	28	X		Writing Intensive III – embedded	0
Image: section of the section of th					
Image: sector of the sector	29			Culminating Gen Ed Experience	0
30General Education Credits:415231Major Program Courses32CHE 205 Analytical Chemistry Lecture333CHE 206 Analytical Chemistry Lab234CHE 211 Organic Chemistry II435CHE 212 Organic Chemistry III436CHE 300 Physical Chemistry II437CHE 301 Physical Chemistry II4		j.		 may be satisfied by a major 	
31Major Program Courses32CHE 205 Analytical Chemistry Lecture333CHE 206 Analytical Chemistry Lab234CHE 211 Organic Chemistry I435CHE 212 Organic Chemistry II436CHE 300 Physical Chemistry I437CHE 301 Physical Chemistry II4				capstone	
32CHE 205 Analytical Chemistry Lecture333CHE 206 Analytical Chemistry Lab234CHE 211 Organic Chemistry I435CHE 212 Organic Chemistry II436CHE 300 Physical Chemistry I437CHE 301 Physical Chemistry II4		General Education Credits:	41		52
Lecture333334CHE 211 Organic Chemistry I35CHE 212 Organic Chemistry II44CHE 211 Organic Chemistry II44CHE 212 Organic Chemistry II4436374364374	31	Major F	Program	Courses	
33CHE 206 Analytical Chemistry Lab234CHE 211 Organic Chemistry I4CHE 210 Organic Chemistry I435CHE 212 Organic Chemistry II4CHE 211 Organic Chemistry II436CHE 300 Physical Chemistry I437CHE 301 Physical Chemistry II4	32			CHE 205 Analytical Chemistry	3
Lab34CHE 211 Organic Chemistry I4CHE 210 Organic Chemistry I435CHE 212 Organic Chemistry II4CHE 211 Organic Chemistry II436CHE 300 Physical Chemistry I437CHE 301 Physical Chemistry II4				Lecture	
34CHE 211 Organic Chemistry I4CHE 210 Organic Chemistry I435CHE 212 Organic Chemistry II4CHE 211 Organic Chemistry II436CHE 300 Physical Chemistry I437CHE 301 Physical Chemistry II4	33			CHE 206 Analytical Chemistry	2
35CHE 212 Organic Chemistry II4CHE 211 Organic Chemistry II436CHE 300 Physical Chemistry I437CHE 301 Physical Chemistry II4				Lab	
36CHE 300 Physical Chemistry I437CHE 301 Physical Chemistry II4	34	CHE 211 Organic Chemistry I	4	CHE 210 Organic Chemistry I	4
37 CHE 301 Physical Chemistry II 4	35	CHE 212 Organic Chemistry II	4	CHE 211 Organic Chemistry II	4
	36			CHE 300 Physical Chemistry I	4
38 CHE 421 Biochemistry Lecture I 3	37			CHE 301 Physical Chemistry II	4
	38			CHE 421 Biochemistry Lecture I	3
39 CHE 422 Biochemistry Lecture II 3	39			CHE 422 Biochemistry Lecture II	3

40			CHE 431 Biochemistry Lab	2
41			CHE 250 Chemistry Seminar (.5	1
			credits each; 1 credits is	
			required, and additional 1 credit	
			is optional)	
42			Select one of the following	7-12
			options:	
			CHE 297 Cooperative Education	
			Research (12 credits)	
			OR	
			CHE 430 Senior Research	
			AND	
			one advanced elective from.	
			CHE 311 Inorganic Chemistry	
			CHE 400 Instrumental Analysis	
			Lecture	
			CHE 415 Medicinal Chemistry	
			CHE 420 Advanced Topics in	
			Organic Chemistry	
			CHE 438 Molecular Biochemistry	
			of Nucleic Acids	
			BIO 300 Cell Biology	
		$\wedge / /$	BIO 312 Genetics	
43	(BIO 104 General Biology II	4
44	DUV 221 Calculus Deced Division L		MAT 182 Calculus II	4
45	PHY 221 Calculus-Based Physics I	4	PHY 110 General Physics I	4
46	Due sueur Course Creditor	10	PHY 111 General Physics II	4
47 48	Program Course Credits:	12		53-58
		en Elect	lives	
49	From line 11: One credit of MAT 186			1
	received at WCSU as an open elective			
50	credit			
50 51	BIO 235 Microbiology	4		4
51	Students who have fulfilled foreign			
	language requirements in high school or who use open elective credits at the			
	community college to fulfill foreign			
	language requirements will end up with			
	more open elective credits at WCSU.			
52	Open Elective credits:	3		10-15
53	Total Credits at the Community College	60-61	Total Credits for the 4-Year	10 15
			Degree	•
L			0	1

Template 1

Western Connecticut State University

Complete four-year degree with articulation of community college degree to four-year degree

Chemistry, Biochemistry Option, B.S. ACS approved

There are no additional requirements for admission to this program.

1	C	ommunity Colleges*:		WCSU	
2			Credits		Credits
3		Fran	nework	30**	
4	General Education Requirements				
5	Competency:				
6	Section A			\mathbf{O}	
7	Written I	English 101	3	Writing Intensive I	3
8	Written II	Gen Ed	3	Writing Intensive II	3
9	Scientific Reasoning	CHE 121 General Chemistry I	4	Scientific Inquiry: CHE 110 General Chemistry I	4
10	Scientific Knowledge	CHE 122 General Chemistry II	4	General Education Elective / Second Exposure to Scientific Inquiry: CHE 111 General Chemistry II	4
11	Quantitative	MAT 186 Pre-Calculus	4	Quantitative Reasoning: MAT 133 Pre-Calculus (one credit goes to Open Electives: see line 50)	3
12	Historical Knowledge	Gen Ed*	3	Critical Thinking	3
13	Social Phenomena	Gen Ed	3	Information Literacy	3
14	Aesthetic Dimensions	Gen Ed	3	Creative Process	3
15	Section B				
16	Competency:	Gen Ed	3	Oral Communication	3
17	Competency:	Gen Ed	3	General Education Elective	3
18	Framework30 C	redits (30-31):	1		32
19		Р	athway	30	
20		Additional Ger	neral Ed	ucation Courses	
	long learning in complete a mini	and through 10 competenc	ies. Part I heir majo:	iculum: Part I (Foundations) addre: I (Explorations) requires students to r. Students must also repeat three ation.	2

	In the Framework30 portion of the transfer	dearee s	tudents who complete a TAP deared	a will
	receive credit for having met 9 competencie		, 5	
	(Scientific Inquiry), and 30 of the 40 credits			
	In this pathway, student will have complete	• •		na in
	Quantitative Reasoning, and will have met	•		
21	MAT 254 Calculus I	4	General Education Elective:	4
21	MAT 254 Calculus I	4	MAT 181 Calculus I	4
22	PIO 121 Conorol Biology I	4	General Education Elective: BIO	4
22	BIO 121 General Biology I	4	103 General Biology I	4
23			Intercultural Competence	/ 3
23			Health and Wellness	3
				3
25			A foreign language is required	
			for this major. Follow this link	(If 6 credits
			and click on the program sheet for requirements. Three credits	are
			of foreign language may count	needed
			as fulfilling Intercultural	at
			Competence	WCSU,
			competence	3
			\sim	credits
				will
				count
		N //		as Inter
				cultural
		//		Com
		V		petence
26	\sim		Must be taken at WCSU:	
27			General Education Elective /	3
			Second Exposure	
28			Writing Intensive III – embedded	0
	X		in a major course	
29			Culminating Gen Ed Experience	0
	/		– may be satisfied by a major	
			capstone	
30	General Education Credits:			52
31	Major F	Program	Courses	
32	•		CHE 205 Analytical Chemistry	3
			Lecture	
33			CHE 206 Analytical Chemistry	2
			Lab	_
34	CHE 211 Organic Chemistry I	4	CHE 210 Organic Chemistry I	4
35	CHE 212 Organic Chemistry II	4	CHE 211 Organic Chemistry II	4
36			CHE 300 Physical Chemistry I	4
37			CHE 301 Physical Chemistry II	4
38			CHE 421 Biochemistry Lecture I	3
39			CHE 422 Biochemistry Lecture I	3
40			CHE 431 Biochemistry Lab	2
40			CHE 451 DIOCHEITIISU Y Lab	۷ ک

47	PHY 221 Calculus-Based Physics I	4	CHE 311 Inorganic Chemistry CHE 250 Chemistry Seminar (.5 credits each; 1 credits is required, and additional 1 credit is optional) CHE 430 Senior Research BIO 104 General Biology II MAT 182 Calculus II	4 1 4 4 4
43 44 45 46 P 47 48 P	· · ·	4	credits each; 1 credits is required, and additional 1 credit is optional) CHE 430 Senior Research BIO 104 General Biology II MAT 182 Calculus II	4
44 45 46 P 47 48 P	· · ·	4	required, and additional 1 credit is optional) CHE 430 Senior Research BIO 104 General Biology II MAT 182 Calculus II	4
44 45 46 P 47 48 P	· · ·	4	is optional) CHE 430 Senior Research BIO 104 General Biology II MAT 182 Calculus II	4
44 45 46 P 47 48 P	· · ·	4	CHE 430 Senior Research BIO 104 General Biology II MAT 182 Calculus II	4
44 45 46 P 47 48 P	· · ·	4	BIO 104 General Biology II MAT 182 Calculus II	4
45 46 P 47 48 P	· · ·	4	MAT 182 Calculus II	
46 P 47 48 P	· · ·	4		4
47 48 P	· · ·	4		
48 P			PHY 110 General Physics I	4
	Duaguana Caunaa Cuadita.		PHY 111 General Physics II	4
49	Program Course Credits:	12		54
	Ор	en Elect	tives	
50 F	From line 11: One credits of MAT 186			1
re	received at WCSU as an open elective			l
С	credit			l
51 B	BIO 235 Microbiology	4		4
52 <mark>S</mark>	Students who have fulfilled foreign		\mathbf{O}	
la	anguage requirements in high school or			l
v	who use open elective credits at the		\sim	l
C	community college to fulfill foreign			l
la	anguage requirements will end up with			l
n	more open elective credits at WCSU.			
	Open Elective credits:	3		14
54 T	Total Credits at the Community College	60	Total Credits for the 4-Year	120
		V	Degree	L

Template 2

Credits remaining in the four-year degree Biochemistry, B.S. – General Track

1	Central Connecticut State University	
2	Remaining General Education Courses	
3	Course	Credits
4	Study Area I – Literature	0-3
5	Study Area I – Arts and Humanities	0-3
6	Study Area II – Social Sciences	0-3
7	Study Area III – Behavioral Sciences	0-3
8	Skill Area II – Math/Stat/ Comp Sci	0-3
9	Skill Area III – Foreign Language Proficiency. See requirements here. If the	6
	requirement has been met in whole or in part, general education and open elective	
	credits will adjust accordingly.	
10	General Education Credits	15
11	Remaining Major Program Requirements	
12	Course 🔨 🔨	Credits
13	BMS 102/103 Introduction to Biomolecular Science	4
14	BMS 201 Principles of Cell and Molecular Biology	4
15	BMS 190 and 290 Introduction to Research I & II	1
16	BMS 390 or CHEM 238 Independent Research	1
17	BMS 491 or CHEM 438 Advanced Independent Research	1
18	CHEM 260 Foundations of Inorganic Chemistry	3
19	CHEM 316 Spectrometric identification of Organic Compounds	3
20	CHEM 320 Biophysical Chemistry	3
21	CHEM 332 Chemical Literature	1
22	CHEM 432 Chemistry Seminar	1
23	Select 6-8 credits from the following:	6-8
	BMS 306 Génetics (3)	
	BMS 307 Genomics (4)	
	BMS 311 Cell Biology (4)	
	BMS 415 Advanced Exploration in Cell, Molecular, and Physiological Biology (3)	
	BMS 490 Topics in Biomolecular Sciences (1-4)	
	BMS 495 Capstone in Molecular Biology (4)	
	BMS 562 Advanced Developmental Biology (3)	
	BMS 570 Advanced Genetics (3)	
	CHEM 456 Toxicology (3)	
24	Select one of the following:	3
	BMS 496 Capstone in Cellular Metabolism and Energetics	
	CHEM 354 Foundations of Biochemistry	

CHEM 455 Biochemistry Lab	1
CHEM 458 Advanced Biochemistry	3
Select one of the following:	4
PHYS 122 General Physics II	
PHYS 126 University Physics II	
	39-41
Minor – A minor is not required for this program.	0
Remaining Open Electives	
Courses	Credits
Open Elective credits	4-6
Students who have fulfilled the foreign language requirement in high school or who	
use open elective credits at the community college to fulfill foreign language and/or	
minor requirements will end up with more open elective credits at the CCSU.	
Total Credits Remaining for the 4-Year Degree	60
Alash	
	CHEM 458 Advanced Biochemistry Select one of the following: PHYS 122 General Physics II PHYS 126 University Physics II Program Course Credits Minor – A minor is not required for this program. Remaining Open Electives Courses Open Elective credits Students who have fulfilled the foreign language requirement in high school or who use open elective credits at the community college to fulfill foreign language and/or minor requirements will end up with more open elective credits at the CCSU.

21

Template 2

Credits remaining in the four-year degree

Biochemistry, B.S. – American Chemical Society Certified Track

1	Central Connecticut State University	/
2	Remaining General Education Courses	<i>,</i>
3	Course	Credits
4	Study Area I – Literature	0-3
5	Study Area I – Arts and Humanities	0-3
6	Study Area II – Social Sciences	0-3
7	Study Area III – Behavioral Sciences	0-3
8	Skill Area II – Math/Stat/ Comp Sci	0-3
9	Skill Area III – Foreign Language Proficiency. See requirements here. If the	6
	requirement has been met in whole or in part, general education and open elective	
	credits will adjust accordingly.	
10	General Education Credits	15
11	Remaining Major Program Requirements	
12	Course	Credits
13	BMS 102/103 Introduction to Biomolecular Science	4
14	BMS 201 Principles of Cell and Molecular Biology	4
15	BMS 190 and 290 Introduction to Research I & II	1
16	BMS 390 or CHEM 238 Independent Research	1
17	BMS 491 or CHEM 438 Advanced Independent Research	1
18	CHEM 260 Foundations of Inorganic Chemistry	3
19	CHEM 316 Spectrometric identification of Organic Compounds	3
20	CHEM 320 Biophysical Chemistry	3
21	CHEM 322 Quantum Chemistry	3
22	CHEM 323 Physical Chemistry Lab	1
23	CHEM 332 Chemical Literature	1
24	CHEM 402/Instrumental Analysis	4
25	CHEM 354 Foundations of Biochemistry	3
26	CHEM 432 Chemistry Seminar	1
27	CHEM 455 Biochemistry Lab	1
28	CHEM 458 Advanced Biochemistry	3
29	PHYS 126 University Physics II	4
30	Program Course Credits	
31	Minor – A minor is not required for this program.	41
32	Remaining Open Electives	
33	Courses	Credits
34	Open Elective credits	4

35	Students who have fulfilled the foreign language requirement in high school or who	
	use open elective credits at the community college to fulfill foreign language and/or	
	minor requirements will end up with more open elective credits at CCSU.	
36	Total Credits Remaining for the 4-Year Degree	60

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Revised 05/26/2021

Template 2

Credits remaining in the four-year degree

Biochemistry, B.S.

1	Eastern Connecticut State University	/
2	Remaining General Education Courses	
3	Course	Credits
4	Two of the first four below must be completed at ECSU.	
5	T2 Cultural Perspectives	3
6	T2 Individuals and Societies	3
7	T2 Creative Expressions	3
8	T2 Applied Information Technologies	3
9	T3 Capstone	3
10	Foreign Language Proficiency:	6
	See requirements <u>here</u> . If the requirement has been met in whole or in part, general	
	education and open elective credits will adjust accordingly.	
11	General Education Credits	21
12	Remaining Major Program Requirements	
13	Course	Credits
14	BIO 220 Cell Biology with Lab	4
15	BIO 230 General Genetics with Lab	4
16	CHE 316/317 Biochemistry Lwith Lab	4
17	CHE 318/319 Biochemistry II with Lab	4
18	CHE 323 Physical Biochemistry	3
19	CHE 425 Physical Biochemistry Techniques	3
20	CHE 425 Chemical Instrumentation with Lab	4
21	MAT 244 Calculus II with Technology	4
22	PHY 205 Physics II with Lab	4
23	Program Course Credits	34
24	Remaining Open Electives	
25	Courses	Credits
26	Open Elective credits	5
27	Students who have fulfilled foreign language requirements in high school or who use	
	open elective credits at the community college to fulfill foreign language	
	requirements will end up with more open elective credits at ECSU.	
28	Total Credits Remaining for the 4-Year Degree	60

Template 2

Credits remaining in the four-year degree Chemistry, B.S. – Concentration: Biochemistry Students must complete 2 "W" courses at SCSU.

		/
1	Southern Connecticut State University	/
2	Remaining General Education Courses	
3	Course	Credits
4	Select three of the following four:	9
5	American Experience	0-3
6	Creative Drive	0-3
7	Global Awareness	0-3
8	Mind and Body	0-3
9	Tier 3 Connections Capstone:	0
	CHE 301 The Preparation of Scientific Documents for Chemistry	
	CHE 445 Chemical Hazards and Laboratory Safety	
	CHE 496 Chemistry Seminar	
	(See lines 14, 17, and 21)	
10	General Education Credits	9
11	Remaining Major Program Requirements	
12	Course	Credits
13	CHE 240 Analytical Chemistry	4
14	CHE 301 The Preparation of Scientific Documents for Chemistry	1
15	CHE 370 Physical Chemistry	3
16	CHE 435 Inorganic Chemistry I	3
17	CHE 445 Chemical Hazards and Laboratory Safety	1
18	CHE 450 Biochemistry I	4
19	CHE 451 Biochemistry II	4
20	Select one of the following:	3
	CHE 456 Médicinal Chemistry	
	CHE 458 Drug Discovery	
21	CHE 496 Chemistry Seminar	1
22	Select one additional CHE course at 300-level or above	3-4
23	Select two BIO courses at 200-level or above	6-8
31	Program Course Credits	33
32	Remaining Open Electives	
33	Courses	Credits
34	Open Elective credits	18
35	Total Credits Remaining for the 4-Year Degree	60

Template 2

Credits remaining in the four-year degree Chemistry, Biochemistry Option, B.S. Non-ACS approved

1	Western Connecticut State University	/
2	Remaining General Education Courses	
3	Course	Credits
	If not already met, students must complete enough additional credits to add up to a	
	total of 40 credits outside the major to meet the Explorations requirement. The	
	Framework30 portion of the community college degree meets 30 of the 40 credits.	
	Students must also repeat three different competencies, excluding writing and first-year	
	navigation.	
	In this pathway, students will have completed two repeats, one in Scientific Inquiry and	
	one in Quantitative Reasoning, and will have met 38 of the Explorations 40 credits.	
4	Intercultural Competence	3
5	Health and Wellness	3
6	General Education Elective / Second Exposure	3
7	A foreign language is required for this major. Follow this link and click on the program	3
	sheet for requirements. Three credits of foreign language may count as fulfilling	(If 6
	Intercultural Competence	credits
		are needed
		at WCSU,
		3 credits
		will count as Inter
		cultural
		Com-
		petence)
8	Must be taken at WCSU:	0
9	Writing Intensive III – embedded in a major course	0
10	Culminating Gen Ed Experience – may be satisfied by a major capstone	0
11	General Education Credits	12
12	Remaining Major Program Requirements	
13	Course	Credits
14	CHE 205 Analytical Chemistry Lecture	3
15	CHE 206 Analytical Chemistry Lab	2
16	CHE 250 Chemistry Seminar (.5 credits each; 1 credits is required, and additional 1	1
	credit is optional)	
17	CHE 300 Physical Chemistry I	4
18	CHE 301 Physical Chemistry II	4
19	CHE 421 Biochemistry Lecture I	3
20	CHE 422 Biochemistry Lecture II	3

21	CHE 431 Biochemistry Lab	2
22	Select one of the following options:	7-12
	CHE 297 Cooperative Education Research (12 credits)	
	OR	
	CHE 430 Senior Research and choice of one advanced elective from	
	CHE 311 Inorganic Chemistry	
	CHE 400 Instrumental Analysis Lecture	
	CHE 415 Medicinal Chemistry	
	CHE 420 Advanced Topics in Organic Chemistry	
	CHE 438 Molecular Biochemistry of Nucleic Acids	/
	BIO 300 Cell Biology	
	BIO 312 Genetics	
23	BIO 104 General Biology II	4
24	MAT 182 Calculus II	4
26	PHY 111 General Physics II	4
27	Program Course Credits	41-46
28	Remaining Open Electives	
29	Courses	Credits
30	Open Elective credits	5-10
31	Students who have fulfilled foreign language requirements in high school or who use	
	open elective credits at the community college to fulfill foreign language	
	requirements will end up with more open elective credits at WCSU.	
32	Total Credits Remaining for the 4-Year Degree	60
	AZOL	

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Template 2

Credits remaining in the four-year degree Chemistry, Biochemistry Option, B.S. ACS approved

1	Western Connecticut State University	/
2	Remaining General Education Courses	
3	Course	Credits
	If not already met, students must complete enough additional credits to add up to a	
	total of 40 credits outside the major to meet the Explorations requirement. The	
	Framework30 portion of the community college degree meets 30 of the 40 credits.	
	Students must also repeat three different competencies, excluding writing and first-year	
	navigation.	
	nuvigution.	
	In this pathway, students will have completed two repeats, one in Scientific Inquiry and	
	one in Quantitative Reasoning, and will have met 38 of the Explorations 40 credits.	
4	Intercultural Competence	3
5	Health and Wellness	3
6	General Education Elective / Second Exposure	3
7	A foreign language is required for this major. Follow this link and click on the program	3
-	sheet for requirements. Three credits of foreign language may count as fulfilling	(If 6
	Intercultural Competence	credits
		are
		needed at WCSU,
		3 credits
		will count
		as Inter cultural
		Com-
		petence)
8	Must be taken at WCSU:	
9	Writing Intensive III – embedded in a major course	0
10	Culminating Gen Ed Experience – may be satisfied by a major capstone	0
11	General Education Credits	12
12	Remaining Major Program Requirements	
13	Course	Credits
14	CHE 205 Analytical Chemistry Lecture	3
15	CHE 206 Analytical Chemistry Lab	2
16	CHE 250 Chemistry Seminar (.5 credits each; 1 credit is required, and additional 1 credit	1
	is optional)	
17	CHE 300 Physical Chemistry I	4
18	CHE 301 Physical Chemistry II	4
19	CHE 311 Inorganic Chemistry	4
20	CHE 421 Biochemistry Lecture I	3

CHE 422 Biochemistry Lecture II	3
CHE 430 Senior Research	4
CHE 431 Biochemistry Lab	2
BIO 104 General Biology II	4
MAT 182 Calculus II	4
PHY 111 General Physics II	4
Program Course Credits	42
Remaining Open Electives	
Courses	Credits
Open Elective credits	6
Remove this language if the program does not require a foreign language:	
Students who have fulfilled foreign language requirements in high school or who use	
open elective credits at the community college to fulfill foreign language	
requirements will end up with more open elective credits at WCSU.	
Total Credits Remaining for the 4-Year Degree	60
Although	
	CHE 430 Senior Research CHE 431 Biochemistry Lab BIO 104 General Biology II MAT 182 Calculus II PHY 111 General Physics II Program Course Credits Remaining Open Electives Courses Open Elective credits Remove this language if the program does not require a foreign language: Students who have fulfilled foreign language requirements in high school or who úse open elective credits at the community college to fulfill foreign language

Revised 05/26/2021