Archives AY 2016-2017 AY 2017-2018 AY 2018-2019 AY 2019-2020 AY 2020-2021

CSCU Chemistry Transfer Pathway 2021-2022

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Transfer Pathway and Degree Programs

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Remaining Credits

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Changes

Changes from AY 2016/2017, when the CSCU Pathway Transfer A.A. Degree: Chemistry Studies was first offered.

- SCSU made changes to their LEP and foreign language requirements that do not affect the requirements for the community college pathway degree, but may affect the way the student is received at SCSU.
- Clarified Additional General Education I & II options.
- Corrections made to COSC General Education requirements: added IDS 101.

12/06/2017: Page 12. Removed PHY 121 and 122 as options for WCSU's non-ACS Certified program.

04/17/2018: Updated WCSU programs to reflect changes in general education requirements

05/08/2018: Updated COSC program

07/26/2018: Removed COSC program

03/06/2020: No substantive changes for AY 2020-21 05/27/2021: No substantive changes for AY 2021-22 Learning Outcomes:

1. Complete an Associate of Arts degree in Chemistry Studies and transfer seamlessly into a Bachelor of Arts/Science degree program in Chemistry with junior-level status in the receiving CSCU institution as part of the CSCU Transfer Tickets program.

2. Demonstrate an understanding of fundamental chemical principles by applying critical thinking and problem solving skills in the solution of chemical problems.

3. Plan and implement data collection strategies appropriate to a particular scientific question, record and present the data clearly, and analyze the results accurately.

4. Recall and employ the proper procedures and regulations for safe handling, use, and disposal of chemicals.

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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	4 credits
6	Scientific Knowledge & Understanding	CHE 122 General Chemistry	4 credits
7	Quantitative Reasoning	MAT 254 Calculus I	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		
	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	CHE 211	Organic Chemistry I	4 credits
18	CHE 212	Organic Chemistry II	4 credits
19	PHY 221	Calculus-Based Physics I	4 credits
	Alt: PHY 121***	General Physics I	
20	PHY 222	Calculus-Based Physics II	4 credits
	Alt: PHY 122***	General Physics II	
21	MAT 256	Calculus II	4 credits
22	Unrestricted Free Electives:		9 credits
23	Students should consider beginning or completing		
	work on foreign language requirements (at CCSU,		
	ECSU and WCSU) not already met in high school and		
	majors – up to 9 credits can be completed at the		
	community college).		
			1
24	Pathway30 Total		29 credits

CSCU Pathway Transfer A.A. Degree: Chemistry Studies

and PHY 222.

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Central Connecticut State University

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

Chemistry B.S. - General Program

A minor is not required for this degree

1	Co	ommunity Colleges:		CCSU	
2			Credits		Credits
3		Fra	amewor	k30	
4		General Edu	ication R	Requirements	
5	Competency:				
6	Section A				
7	Written I	English 101	3	English 110	3
		Composition			+
8		Gen Ed Elective	3	Skill Area I – Communication	3
9	Scientific Reasoning	CHE 121 General	4	CHEM 161 General Chemistry	3
		Chemistry I		CHEM 162 General Chemistry Laboratory	1
10	Scientific Knowledge	CHE 122 General	4	CHEM 200 Foundations of	3
		Chemistry II		Analytical Chemistry	
				CHEM 201 Foundations of	1
				Analytical Chemistry Laboratory	
11	Quantitative Reasoning	MAT 254 Calculus	4	MATH 152 Calculus I	4
12	Historical Knowledge	Gen Ed Elective	3	Study Area II - History	3
13	Social Phenomena	Gen Ed Elective	3	Study Area II – Social Sciences	3
14	Aesthetic Dimensions	Gen Ed Elective	3	Study Area I – Arts and	3
				Humanities	
15	Section B				
16	Competency:	Gen Ed Elective	3	Study Area IV – University	3
				Requirement	
17	Competency:	Gen Ed Elective	3	Study Area III – Behavioral	3
				Sciences	
18	Framework30 Cre	edits (30-31):			33
19		F	Pathway	30	
20		Additional Ger	neral Edu	ucation Courses	
21				Study Area I: Literature	3
22				Study Area I: Arts and	3
				Humanities	
23				Study Area II: Social Sciences	3
24				Study Area III: Behavioral	3
				Sciences	
25				Skill Area II: Math / Stat /	3
				Computer Science	

26			Skill Area III – Foreign Language	6
			Proficiency	-
			See requirements here. If the	
			requirement has been met in	
			whole or in part, general	
			education and open elective	
			credits will adjust accordingly.	
27				
28	General Education Credits:	33		54
29	Major P	rogram	Courses	
30	CHE 211 Organic Chemistry I	4	CHEM 210 Foundations of	3
			Organic Chemistry	
			CHEM 211 Foundations of	1
			Organic Chemistry Laboratory	
31	CHE 212 Organic Chemistry II	4	CHEM 212 Organic Synthesis	3
			CHEM 213 Organic Synthesis	1
			Laboratory	
32			CHEM 238 Introduction to	1-6
			Research	
33		(CHEM 260 Foundations of	3
			Inorganic Chemistry	
34			CHEM 316 Spectrometric	3
			Identification of Organic	
	\sim		Compounds	
35	\frown		Choose 3 credits from:	3
			CHEM 320 Biophysical Chemistry	
			CHEM 321 Physical Chemistry of	
			Thermodynamics & Kinetics	
			CHEM 322 Physical Chemistry of	
			Quantum & Statistical	
			Mechanics	
36			Choose 3 credits from:	3
			CHEM 354 Foundations of	
			Biochemistry	
			CHEM 406 Environmental	
			Chemistry	
			CHEM 485 Topics in Chemistry	
37			Choose 4 credits from:	
			CHEM 402 Instrumental	4
			Methods in Analytical Chemistry	
			or	
			CHEM 460 Inorganic Symmetry	(3)
			and Spectroscopy with	
			CHEM 323 Physical Chemistry	(1)
1			Lab or	

			CHEM 455 Biochemistry Lab or	
			CHEM 462 Inorganic Chemistry	
			Lab	
38			CHEM 432 Chemistry Seminar	2
39			CHEM 438 Undergraduate	1-6
			Research	
40	PHY 221 Calculus-Based Physics I	4	PHYS 125 University Physics I	4
	Alt: PHY 121 General Physics I***		Alt: PHYS 121 General Physics I	
41	PHY 222 Calculus-Based Physics II	4	PHYS 126 University Physics II	4
	Alt: PHY 122 General Physics II ***		Alt: PHYS 122 General Physics II	
42	MAT 256 Calculus II	4	MATH 221 Calculus II	4
43	Program Course Credits:	20		40-50
44	Оре	en Elect	ives	
45	Students who have fulfilled the foreign			
	language requirement in high school or			
	who use open elective credits at the			
	community college to fulfill foreign		$\mathbf{\wedge}$	
	language requirements will end up with			
	more open elective credits at CCSU.			
46	Open Elective credits:	7		16-26
47	Total Credits at the Community College	60	Total Credits for the 4-Year	120
			Degree	
	A720			

Transfer Pathway and Degree Program Central Connecticut State University

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

Chemistry B.S. - American Chemical Society Certified

A minor is not required for this degree

1	Сог	mmunity Colleges:		CCSU	
2			Credits		Credits
3		F	ramew	ork30	
4		General Ec	ducation	Requirements	
5	Competency:			-	
6	Section A				
7	Written I	English 101 Composition	3	English 110	3
8	Written II	Gen Ed Elective	3	Skill Area I Communication	3
9	Scientific Reasoning	CHE 121 General Chemistry I	4	CHEM 161 General Chemistry CHEM 162 General Chemistry Laboratory	3 1
10	Scientific Knowledge	CHE 122 General Chemistry II	4	CHEM 200 Foundations of Analytical Chemistry CHEM 201 Foundations of Analytical Chemistry Laboratory	3 1
11	Quantitative	MAT 254 Calculus	4	MATH 152 Calculus I	4
12	Historical Knowledge	Gen Ed Elective	3	Study Area II - History	3
13	Social Phenomena	Gen Ed Elective	3	Study Area II – Social Sciences	3
14	Aesthetic Dimensions	Gen Ed Elective	3	Study Area I – Arts and Humanities	3
15	Section B				
16	Competency:	Gen Ed Elective	3	Study Area IV – University Requirement	3
17	Competency:	Gen Ed Elective	3	Study Area III – Behavioral Sciences	3
18	Framework30 Cre	edits (30-31):			33
19			Pathwa	iy30	
20		Additional G	eneral E	ducation 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				Skill Area II: Math / Stat /	3
				Computer Science	
26				Skill Area III – Foreign Language Proficiency See requirements <u>here</u> . If the requirement has been met in	6

			whole or in part, general education	
			and open elective credits will	l
			adjust accordingly.	L
27	General Education Credits:	33		54
28	Major	Progra	m Courses	
29	CHE 211 Organic Chemistry I	4	CHEM 210 Foundations of Organic	3
	с ,		Chemistry	l
			CHEM 211 Foundations of Organic	1
			Chemistry Laboratory	l
30	CHE 212 Organic Chemistry II	4	CHEM 212 Organic Synthesis	3
			CHEM 213 Organic Synthesis	1
			Laboratory	L
31			CHEM 238 Introduction to	1-6
			Research	
32			CHEM 260 Foundations of	3
			Inorganic Chemistry	
33			CHEM 316 Spectrometric	3
			Identification of Organic	l
			Compounds	
34			CHEM 321 Physical Chemistry of	3
		(Thermodynamics & Kinetics	
35			CHEM 322 Physical Chemistry of	3
			Quantum & Statistical Mechanics	
36			CHEM 323 Physical Chemistry	1
27			Laboratory	
37	\sim		CHEM 354 Foundations of	3
20			Biochemistry	
50			CHEWI 402 Instrumental Methods	4
30			In Analytical Chemistry	2
39			CHEM 432 Chemistry Seminar	1.6
55			Posoarch	1-0
40			CHEM 455 Biochemistry Lab	1
41			CHEM 460 Inorganic Symmetry and	2
			Spectroscopy	5
42			CHEM 462 Inorganic Chemistry Lab	1
43	PHY 221 Calculus-Based Physics I	4	PHYS 125 University Physics I	4
44	PHY 222 Calculus-Based Physics I	4	PHYS 126 University Physics II	4
45	MAT 256 Calculus II	4	MATH 221 Calculus II	4
46			Students must also complete one	··
			additional course from the	4
			following:	•
			MATH 218 Discrete Mathematics	l
			MATH 222 Calculus III	1
			MATH 226 Linear Algebra and	l
			Probability for Engineers	1
				(3)

47	Program Course Credits:		MATH 228 Introduction to Linear Algebra CS 151 Computer Science I	62-72
49				
50	0	pen Ele	ctives	
51	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 requirements will end up with more open elective credits at CCSU.			
52	Open Elective credits:	7		0-4
53	Total Credits at the Community College	60	Total Credits for the 4-Year Degree	120- 126

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Transfer Pathway and Degree Program Southern Connecticut State University

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

Chemistry B.S.

1	Co	ommunity Colleges:		SCSU	
2			Credits		Credits
3		Fra	amewo	rk30	
4		General Edu	cation I	Requirements	
5	Competency:				
6	Section A				
7	Written I	English 101 Composition	3	First Year Experience	3
8	Written II	Gen Ed Elective	3	Written Communication	3
9	Scientific Reasoning	CHE 121 General Chemistry I	4	CHE 120 General Chemistry I	4
10	Scientific Knowledge	CHE 122 General Chemistry II	4	CHE 121 General Chemistry II	4
11	Quantitative	MAT 254 Calculus I	4	MAT 150 Calculus	4
12	Historical Knowledge	Gen Ed Elective	3	Time and Place	3
13	Social Phenomena	Gen Ed Elective	3	Social Structure, Conflict & Consensus	3
14	Aesthetic Dimensions	Gen Ed Elective	3	Cultural Expressions	3
15	Section B				
16	Competency:	Gen Ed Elective	3	Critical Thinking	3
17	Competency:	Gen Ed Elective	3	Technological Fluency	3
18	Framework30 Cr	edits (33):			33
19		P	athway	/30	
20		Additional Ger	neral Ed	ucation Courses	
21				Select three of the following four	9
22				American Experience	
23					
24				Global Awareness	
25				Mind and Body	
26					
27				Must be taken at SCSU:	
28				Tier 3 Connections Capstone CHE 301 The preparation of Scientific Documents for Chemistry CHE 445 Chemical Hazards and	3

29General Education Credits:Image: constraint of the sector of the				CHE 496 Chemistry Seminar	
30 Major Program Courses 31 CHE 211 Organic Chemistry I 4 CHE 260 Organic Chemistry I 4 32 CHE 212 Organic Chemistry II 4 CHE 261 Organic Chemistry II 4 33 CHE 212 Organic Chemistry II 4 CHE 240 Quantitative Analysis I 4 34 CHE 370 Physical Chemistry I 3 3 1 1 34 CHE 371 Physical Chemistry I 1 1 1 1 35 CHE 371 Physical Chemistry II 3 </td <td>29</td> <td>General Education Credits:</td> <td></td> <td></td> <td>45</td>	29	General Education Credits:			45
31 CHE 211 Organic Chemistry I 4 CHE 260 Organic Chemistry II 4 32 CHE 212 Organic Chemistry II 4 CHE 261 Organic Chemistry II 4 33 CHE 212 Organic Chemistry II 4 CHE 261 Organic Chemistry II 4 34 CHE 212 Organic Chemistry II 4 CHE 270 Physical Chemistry I 3 34 CHE 372 Physical Chemistry I 1 Laboratory 1 35 CHE 371 Physical Chemistry II 1 1 36 CHE 373 Physical Chemistry II 1 1 37 CHE 435 Inorganic Chemistry II 1 1 38 CHE 435 Inorganic Chemistry I 1 1 40 CHE 435 Inorganic Chemistry I (for ACS 4 4 certified degree) 41 CHE 430 Biochemistry I (for ACS 4 4 6-8 42 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists 4 4 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists 4 4 44 MAT 256 Calculus II 4 MAT 151 Calculus II 4 45 MAT 252 Calculu	30	Major P	Program	n Courses	
32 CHE 212 Organic Chemistry II 4 CHE 261 Organic Chemistry II 4 33 CHE 240 Quantitative Analysis I 4 34 CHE 370 Physical Chemistry I 3 35 CHE 372 Physical Chemistry I 1 1aboratory 1 1 1 36 CHE 371 Physical Chemistry II 3 37 CHE 373 Physical Chemistry II 1 1aboratory 3 3 1 38 CHE 435 Inorganic Chemistry II 1 1aboratory 1 1 1 39 CHE 436 Inorganic Chemistry I 1 1aboratory 1 1 1 40 CHE 450 Biochemistry I (for ACS certified degree) 4 41 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists and Engineers I 4 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers I 4 44 MAT 256 Calculus II 4 PHY 231 Physics for Scientists and Engineers II 4 45 Program Course Credits (non ACS certified): 7 Non-ACS: 50-52 <td>31</td> <td>CHE 211 Organic Chemistry I</td> <td>4</td> <td>CHE 260 Organic Chemistry I</td> <td>4</td>	31	CHE 211 Organic Chemistry I	4	CHE 260 Organic Chemistry I	4
33 CHE 240 Quantitative Analysis I 4 34 CHE 370 Physical Chemistry I 3 35 CHE 372 Physical Chemistry I 1 1 Laboratory 3 36 CHE 371 Physical Chemistry II 3 37 CHE 371 Physical Chemistry II 1 1 Laboratory 3 38 CHE 435 Inorganic Chemistry II 1 1 Laboratory 3 39 CHE 436 Inorganic Chemistry I 1 1 Laboratory 3 40 CHE 430 Biochemistry I (for ACS certified degree) 4 41 CHE 450 Biochemistry I (for ACS certified degree) 4 42 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists and Engineers I 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers II 4 44 MAT 256 Calculus II 4 PHY 231 Calculus III 4 46 Program Course Credits (non ACS certified): 50-52 50-52 47 Program Course Credits (with ACS certification): 7 Non-ACS: 24-26 </td <td>32</td> <td>CHE 212 Organic Chemistry II</td> <td>4</td> <td>CHE 261 Organic Chemistry II</td> <td>4</td>	32	CHE 212 Organic Chemistry II	4	CHE 261 Organic Chemistry II	4
34 CHE 370 Physical Chemistry I 3 35 CHE 372 Physical Chemistry I 1 136 CHE 371 Physical Chemistry II 3 36 CHE 373 Physical Chemistry II 1 137 CHE 373 Physical Chemistry II 1 14 CHE 373 Physical Chemistry II 1 138 CHE 435 Inorganic Chemistry I 1 139 CHE 436 Inorganic Chemistry I 1 140 CHE 450 Biochemistry I (for ACS certified degree) 4 41 CHE 450 Physics for Scientists and Engineers I 4 42 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists and Engineers I 4 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers I 4 44 MAT 256 Calculus II 4 MAT 151 Calculus II 4 46 Program Course Credits (non ACS certified): 5 50-52 47 Program Course Credits (with ACS certified): 7 Non-ACS: 24-26 47 Program Course Credits (with ACS certified): 7 Non-ACS: 24-26 48 Open Electi	33			CHE 240 Quantitative Analysis I	4
35 CHE 372 Physical Chemistry I 1 36 CHE 371 Physical Chemistry II 3 37 CHE 373 Physical Chemistry II 1 38 CHE 373 Physical Chemistry II 1 39 CHE 435 Inorganic Chemistry I 1 40 CHE 436 Inorganic Chemistry I 1 41 CHE 430 Biochemistry I (for ACS certified degree) 4 41 2 electives at the CHE 3xx or 4xx evel 6-8 42 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists and Engineers I 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers II 44 MAT 256 Calculus II 4 MAT 151 Calculus II 4 45 Program Course Credits (non ACS certified): 50-52 50-52 48 Open Electives 50-52 49 Open Electives 7 Non-ACS: 24-26 50 ACS: 20-22 51 Total Credits at the Community College 60 Total Credits for the 4-Year Degree	34			CHE 370 Physical Chemistry I	3
36 Laboratory 36 CHE 371 Physical Chemistry II 3 37 CHE 373 Physical Chemistry II 1 38 CHE 373 Physical Chemistry 1 39 CHE 436 Inorganic Chemistry 1 40 CHE 450 Biochemistry I (for ACS certified degree) 4 41 CHE 450 Biochemistry I (for ACS certified degree) 4 42 PHY 221 Calculus-Based Physics I 4 PHY 231 Physics for Scientists and Engineers I 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers I 44 MAT 256 Calculus II 4 MAT 151 Calculus II 4 45 MAT 256 Calculus II 4 MAT 252 Calculus III 4 46 Program Course Credits (non ACS certified): 50-52 50-52 47 Program Course Credits (with ACS certification): 7 Non-ACS: 24-26 48 Open Electives 4CS: 20-22 50 ACS: 20-22 120 51 Total Credits at the Community College 60 Total Credits for the 4-Year Degree 120	35			CHE 372 Physical Chemistry I	1
36 CHE 371 Physical Chemistry II 3 37 CHE 373 Physical Chemistry II 1 1 Laboratory 1 38 CHE 435 Inorganic Chemistry 3 39 CHE 436 Inorganic Chemistry 1 40 CHE 450 Biochemistry I (for ACS certified Degree) 4 41 CHE 450 Physics for Scientists evel 6-8 42 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists and Engineers I 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers I 44 MAT 256 Calculus II 4 PHY 231 Physics for Scientists and Engineers II 45 MAT 256 Calculus II 4 MAT 252 Calculus II 4 46 Program Course Credits (non ACS certified): 50-52 50-52 47 Program Course Credits (with ACS certification): 7 Non-ACS: 24-26 48 Open Electives 7 Non-ACS: 24-26 50 ACS: 7 20-22 20-22 51 Total Credits at the Community College 60 Total Credits for the 4-Year Degree 120				Laboratory	
37 CHE 373 Physical Chemistry II Laboratory 1 38 CHE 435 Inorganic Chemistry 3 39 CHE 436 Inorganic Chemistry 1 40 CHE 436 Inorganic Chemistry 1 40 CHE 436 Inorganic Chemistry 1 41 CHE 436 Inorganic Chemistry I (for ACS certified degree) 4 41 CHE 436 Diochemistry I (for ACS certified degree) 6-8 42 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists and Engineers I 4 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers II 4 44 MAT 256 Calculus II 4 MAT 151 Calculus II 4 45 MAT 252 Calculus II 4 MAT 252 Calculus II 4 46 Program Course Credits (non ACS certified): 50-52 50-52 47 Program Course Credits (with ACS certification): 7 Non-ACS: 24-26 48 Open Elective credits: 7 Non-ACS: 24-26 50 C ACS: 20-22 120 51 Total Credits at the Community College	36			CHE 371 Physical Chemistry II	3
38 Laboratory 38 CHE 435 Inorganic Chemistry 3 39 CHE 436 Inorganic Chemistry 1 40 CHE 450 Biochemistry I (for ACS certified degree) 4 41 CHE 450 Biochemistry I (for ACS certified degree) 4 41 2 electives at the CHE 3xx or 4xx level 6-8 42 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists and Engineers I 4 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers II 4 44 MAT 256 Calculus II 4 MAT 151 Calculus II 4 45 MAT 252 Calculus II 4 MAT 252 Calculus II 4 46 Program Course Credits (non ACS certified): 5 50-52 47 Program Course Credits (with ACS certification): 5 50-52 48 Open Electives 50-52 24-26 49 Open Elective credits: 7 Non-ACS: 24-26 50 ACS: 20-22 51 Total Credits at the Community College 60 Total Credits for the 4-Year 120	37			CHE 373 Physical Chemistry II	1
38 CHE 435 Inorganic Chemistry 3 39 CHE 436 Inorganic Chemistry 1 40 CHE 450 Biochemistry I (for ACS certified degree) 4 41 CHE 450 Biochemistry I (for ACS certified degree) 4 41 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists and Engineers I 4 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers I 4 44 MAT 256 Calculus II 4 MAT 151 Calculus II 4 45 MAT 252 Calculus II 4 MAT 252 Calculus II 4 46 Program Course Credits (non ACS certified): 5 50-52 47 Program Course Credits (with ACS certification): 7 Non-ACS: 24-26 48 Open Elective credits: 7 Non-ACS: 20-22 50 ACS: 20-22 20-22 51 Total Credits at the Community College 60 Total Credits for the 4-Year Degree 120				Laboratory	
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41certified degree)412 electives at the CHE 3xx or 4xx level6-8 level42PHY 221 Calculus-Based Physics I4 and Engineers I443PHY 222 Calculus-Based Physics II4 and Engineers I444MAT 256 Calculus II4PHY 231 Physics for Scientists and Engineers II445MAT 256 Calculus II4MAT 151 Calculus II446Program Course Credits (non ACS certified):MAT 252 Calculus III447Program Course Credits (with ACS certification):50-5250-5248Open Elective credits:7Non-ACS:24-2650ACS:20-2251Total Credits at the Community College60Total Credits for the 4-Year Degree120	40			CHE 450 Biochemistry I (for ACS	4
41 2 electives at the CHE 3xx or 4xx level 6-8 42 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists and Engineers I 4 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers II 4 44 MAT 256 Calculus II 4 PHY 252 Calculus II 4 45 MAT 256 Calculus II 4 MAT 151 Calculus II 4 46 Program Course Credits (non ACS certified): 4 46-48 46-48 47 Program Course Credits (with ACS certification): 50-52 50-52 48 Open Electives 4 4CS: 24-26 50 ACS: 20-22 51 Total Credits at the Community College 60 Total Credits for the 4-Year Degree 120				certified degree)	
42 PHY 221 Calculus-Based Physics I 4 PHY 230 Physics for Scientists and Engineers I 4 43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers II 4 44 MAT 256 Calculus II 4 MAT 151 Calculus II 4 45 MAT 252 Calculus II 4 MAT 252 Calculus II 4 46 Program Course Credits (non ACS certified): 4 46-48 47 Program Course Credits (with ACS certification): 50-52 48 Open Elective credits: 7 Non-ACS: 24-26 50 ACS: 20-22 51 Total Credits at the Community College 60 Total Credits for the 4-Year Degree 120	41			2 electives at the CHE 3xx or 4xx level	6-8
43 PHY 222 Calculus-Based Physics II 4 PHY 231 Physics for Scientists and Engineers II 4 44 MAT 256 Calculus II 4 MAT 151 Calculus II 4 45 MAT 252 Calculus II 4 MAT 252 Calculus II 4 46 Program Course Credits (non ACS certified): 4 46-48 46-48 47 Program Course Credits (with ACS certification): 50-52 50-52 48 Open Electives 50-52 24-26 50 ACS: 20-22 51 Total Credits at the Community College 60 Total Credits for the 4-Year Degree 120	42	PHY 221 Calculus-Based Physics I	4	PHY 230 Physics for Scientists and Engineers I	4
44MAT 256 Calculus II4MAT 151 Calculus II445MAT 252 Calculus III446Program Course Credits (non ACS certified):447Program Course Credits (with ACS certification):548Open Elective credits:749Open Elective credits:750ACS:24-2650ACS:20-2251Total Credits at the Community College60Total Credits for the 4-Year Degree	43	PHY 222 Calculus-Based Physics II	4	PHY 231 Physics for Scientists	4
44MAT 256 Calculus II4MAT 151 Calculus II445MAT 252 Calculus III446Program Course Credits (non ACS certified):447Program Course Credits (with ACS certification):50-5248Open Elective credits:749Open Elective credits:750ACS:24-2650Total Credits at the Community College6051Total Credits at the Community College60Total Credits for the 4-Year Degree				and Engineers II	
45MAT 252 Calculus III446Program Course Credits (non ACS certified):46-4846-4847Program Course Credits (with ACS certification):50-5250-5248Open Elective credits:7Non-ACS:24-2650Component of the Community College60Total Credits for the 4-Year Degree120	44	MAT 256 Calculus II	4	MAT 151 Calculus II	4
46 certified):Program Course Credits (non ACS certified):46-4847 regram Course Credits (with ACS certification):50-5248Open Elective credits:749Open Elective credits:750ACS:24-2650ACS:20-2251Total Credits at the Community College6050Total Credits for the 4-Year Degree120	45		V	MAT 252 Calculus III	4
47Program Course Credits (with ACS certification):50-5248Open Electives49Open Elective credits:750ACS:24-2650ACS:20-2251Total Credits at the Community College60Total Credits for the 4-Year Degree120	46	Program Course Credits (non ACS certified):			46-48
certification):Open Electives48Open Electives49Open Elective credits:750ACS:20-2251Total Credits at the Community College60Total Credits for the 4-Year Degree120	47	Program Course Credits (with ACS			50-52
48Open Electives49Open Elective credits:7Non-ACS:24-2650ACS:20-2251Total Credits at the Community College60Total Credits for the 4-Year Degree120		certification):			
49 Open Elective credits: 7 Non-ACS: 24-26 50 ACS: 20-22 51 Total Credits at the Community College 60 Total Credits for the 4-Year 120 Degree Degree Degree 120	48	Ор	en Elec	tives	
50 ACS: 20-22 51 Total Credits at the Community College 60 Total Credits for the 4-Year 120 Degree Degree Degree Degree	49	Open Elective credits:	7	Non-ACS:	24-26
51Total Credits at the Community College60Total Credits for the 4-Year120Degree	50			ACS:	20-22
Degree	51	Total Credits at the Community College	60	Total Credits for the 4-Year	120
				Degree	

Transfer Pathway and Degree Program Western Connecticut State University

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

Chemistry B.A. – Non-American Chemical Society Certified

1	Com	munity Colleges:		WCSU	
2			Credits		Credits
3	Framework30				
4	General Education Requirements				
5	Competency:				
6	Section A				
7	Written I	English 101 Composition	3	Written Communication	3
8	Written II	Gen Ed Elective	3	Written Communication II	3
9	Scientific Reasoning	CHE 121 General Chemistry I	4	CHE 110 General Chemistry I	4
10	Scientific Knowledge	CHE 122 General Chemistry II	4	CHE 111 General Chemistry II	4
11	Quantitative	MAT 254 Calculus I	4	MAT 181 Calculus I	4
12	Historical Knowledge	Gen Ed Elective	3	General Education Elective	3
13	Social Phenomena	Gen Ed Elective	3	Critical Thinking	3
14	Aesthetic Dimensions	Gen Ed Elective	3	Creative Process	3
15	Section B				
16	Competency:	Gen Ed Elective	3	Information Literacy	3
17	Competency:	Gen Ed Elective	3	Oral Communication	3
18	Framework30	Credits	33		33
19			Path	าพลy30	
20		Additiona	l Gener	al Education Courses	
	Students complete a two-part general education curriculum: Part I (Foundations) addresseslife-long learning in and through 10 competencies. Part II (Explorations) requires students to complete a minimum of 40 credits outside their major. Students must also repeat three different competencies, excluding writing and first-year navigation.In the Framework30 portion of the transfer degree, students who complete a TAP degree will receive credit for having met 8 competencies in Foundations, one repeat, and 30 or the 40 credits of Explorations.			ldresses dents to ree egree O or the	
21				General Education Elective/Explorations	3

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			CHE 438 Molecular Biochemistry of	
			Nucleic Acids	
45	PHY 221 Calculus-Based Physics I	4	PHY 110 General Physics I	4
46	PHY 222 Calculus-Based Physics	4	PHY 111 General Physics II	4
	П			
47	MAT 256 Calculus II	4	MAT 182 Calculus II	4
48	Program Course Credits			51-56
49		Open	Electives	
50	Open Elective credits	7-9		16-21
51	Total Credits at the Community	60-62	Total Credits for the 4-Year Degree	120
	College			

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Transfer Pathway and Degree Program Western Connecticut State University

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

Chemistry B.A. – American Chemical Society Certified

1	Со	mmunity Colleges		WCSU	
2			Credits		Credits
3	Framework30				
4	General Education Requirements				
5	Competency				
6	Section A				
7	Written I	English 101 Composition	3	Written Communication	3
8	Written II	Gen Ed Elective	3	Written Communication II	3
9	Scientific Reasoning	CHE 121 General Chemistry I	4	CHE 110 General Chemistry I	4
10	Scientific Knowledge	CHE 122 General Chemistry II	4	CHE 111 General Chemistry II	4
11	Quantitative	MAT 254 Calculus I	4	MAT 181 Calculus I	4
12	Historical Knowledge	Gen Ed Elective	3	General Education Elective	3
13	Social Phenomena	Gen Ed Elective	3	Critical Thinking	3
14	Aesthetic Dimensions	Gen Ed Elective	3	Creative Process	3
15	Section B				
16	Competency	Gen Ed Elective	3	Information Literacy	3
17	Competency	Gen Ed Elective	3	Oral Communication	3
18	Framework30	Credits	33		33
19	Pathway30				
20		Additional G	eneral E	ducation Courses	
	Students complete a two-part general education curriculum: Part I (Foundations) addresses life-long learning in and through 10 competencies. Part II (Explorations) requires students to complete a minimum of 40 credits outside their major. Students must also repeat three different competencies, excluding writing and first-year navigation. In the Framework30 portion of the transfer degree, students who complete a TAP degree will receive credit for baying met 9 competencies in Foundations, one repeat				
•	and 30 or the	40 credits of Explorat	ions.		
21				General Education	3
22				General Education Elective/Explorations	3

23			Intercultural	3
			Competency/Explorations	
24			Health and Wellness	3
25			Must be taken at WCSU:	
26				
27			Written Communication III –	0
			embedded in a major course	
28			Culminating General	3
			Education Experience – may	
			be satisfied by a major	
			capstone	
29	General Education Credits:			48
30	Major	· Progra	m Courses	
31	CHE 211 Organic Chemistry I	4	CHE 210 Organic Chemistry I	4
32	CHE 212 Organic Chemistry II	4	CHE 211 Organic Chemistry II	4
33			CHE 205 Analytical Chemistry	3
			Lecture	
34			CHE 206 Analytical Chemistry	2
			Lab	
35			CHE 300 Physical Chemistry I	4
36		•	CHE 301 Physical Chemistry II	4
37			CHE 311 Inorganic Chemistry	4
38			CHE 400 Instrumental	3
			Analysis Lecture	
39			CHE 401 Instrumental	2
			Analysis Lab	
39			CHE 250 Chemistry Seminar	.5
40			CHE 250 Chemistry Seminar	.5
41			CHE 250 Chemistry Seminar	(.5)
40			(optional)	(=)
42			CHE 250 Chemistry Seminar	(.5)
12			(optional)	2.4
45			CHE 421 Biochemistry	3-4
11			CUE 420 Capier Desearch	4
45	PHV 221 Calculus Pased Physics L	Л	DHV 110 General Division	4
46	PHY 222 Calculus-Based Physics I	4	PHY 111 General Physics I	4
47	MAT 256 Calculus II	-+ /	MAT 182 Calculus II	-+ /
48	Program Course Credits:	 20		→ 50-52
49		non Flo	ctives	50.52
50	Open Elective credite:			20.22
50	Total Credits at the Community	/	Total Cradits for the 4 Vacr	120
51		00	Degree	120
	CONCEC	1	DUSICC	1

Credits remaining in the four-year degree

Chemistry B.S. – General Program

A minor is not required for this degree

1	Central Connecticut State University		
2	Remaining General Education Courses		
3	Course	Credits	
4	Study Area I: Literature	3	
5	Study Area I: Arts and Humanities	3	
6	Study Area II: Social Sciences	3	
7	Study Area III: Behavioral Sciences	3	
8	Skill Area II: Math / Stat / Computer Science	3	
9	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.		
10	General Education Credits	21	
11	Remaining Major Program Requirements		
12	Course	Credits	
13	CHEM 238 Introduction to Research	1-6	
14	CHEM 260 Foundations of Inorganic Chemistry	3	
15	CHEM 316 Spectrometric Identification of Organic Compounds	3	
16	Choose 3 credits from:	3	
	CHEM 320 Biophysical Chemistry		
	CHEM 321 Physical Chemistry of Thermodynamics & Kinetics		
	CHEM 322 Physical Chemistry of Quantum & Statistical Mechanics		
17	Choose 3 credits from:	3	
	CHEM 354 Foundations of Biochemistry		
	CHEM 406 Environmental Chemistry		
	CHEM 485 Topics in Chemistry		
18	Choose 4 credits from:		
	CHEM 402 Instrumental Methods in Analytical Chemistry	4	
	or		
	CHEM 460 Inorganic Symmetry and Spectroscopy with	(3)	
	CHEM 323 Physical Chemistry Lab or	(1)	
	CHEM 455 Biochemistry Lab or	(1)	
10	CHEM 462 Inorganic Chemistry Lab	2	
20	CHEM 432 Chemistry Seminar	2	
20	CHEIVI 438 Undergraduate Research	1-6	
21	Program Course Credits	20-30	
24	Remaining Open Electives	1	
24	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		
	requirements will end up with more open elective credits at CCSU.		

25	Open Elective credits	9-19
26	Total Credits Remaining for the 4-Year Degree	60

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Credits remaining in the four-year degree

Chemistry B.S. – American Chemical Society Certified

A minor is not required for this degree

1	Central Connecticut State University		
2	Remaining General Education Courses		
3	Course	Credits	
4	Study Area I: Literature	3	
5	Study Area I: Arts and Humanities	3	
6	Study Area II: Social Sciences	3	
7	Study Area III: Behavioral Sciences	3	
8	Skill Area II: Math / Stat / Computer Science	3	
9	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.		
10	General Education Credits	21	
11	Remaining Major Program Requirements		
12	Course	Credits	
13	CHEM 238 Introduction to Research	1-6	
14	CHEM 260 Foundations of Inorganic Chemistry	3	
15	CHEM 316 Spectrometric Identification of Organic Compounds	3	
16	CHEM 321 Physical Chemistry of Thermodynamics & Kinetics	3	
17	CHEM 322 Physical Chemistry of Quantum & Statistical Mechanics	3	
18	CHEM 323 Physical Chemistry Laboratory	1	
19	CHEM 354 Foundations of Biochemistry	3	
20	CHEM 402 Instrumental Methods in Analytical Chemistry	4	
21	CHEM 432 Chemistry Seminar	2	
22	CHEM 438 Undergraduate Research	1-6	
23	CHEM 455 Biochemistry Lab	1	
24	CHEM 460 Inorganic Symmetry and Spectroscopy	3	
25	CHEM 462 Inorganic Chemistry Lab	1	
26	Students must also complete one additional course from the following:		
	MATH 218 Discrete Mathematics	4	
	MATH 222 Calculus III		
	MATH 226 Linear Algebra and Probability for Engineers		
	MATH 228 Introduction to Linear Algebra		
	CS 151 Computer Science I	(3)	
	Program Course Credits	32-43	
	Remaining Open Electives		
	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		
	requirements will end up with more open elective credits at CCSU.		
	Open Elective credits	0-7	

Total Credits Remaining for the 4-Year Degree	60-64

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Credits remaining in the four-year degree

Chemistry B.S.

1	Southern Connecticut State University	
2	Remaining General Education Courses	
3	Course	Credits
4	Select three of the following four areas:	9
5	American Experience	
6	Creative Drive	
7	Global Awareness	
8	Mind and Body	
9	Tier 3 Connections Capstone	3
	CHE 301 The preparation of Scientific Documents for Chemistry	
	CHE 445 Chemical Hazards and Laboratory Safety	
	CHE 496 Chemistry Seminar	
10	General Education Credits	12
11	Remaining Major Program Requirements	
12	Course	Credits
13	CHE 240 Quantitative Analysis I	4
14	CHE 370 Physical Chemistry I	3
15	CHE 372 Physical Chemistry I Laboratory	1
16	CHE 371 Physical Chemistry II	3
17	CHE 373 Physical Chemistry II Laboratory	1
18	CHE 435 Inorganic Chemistry	3
19	CHE 436 Inorganic Chemistry Laboratory	1
20	2 electives at the CHE 3xx or 4xx level	6-8
21	MAT 252 Calculus III	4
22		
23	CHE 450 Biochemistry I (for ACS certified degree)	(4)
24		
25	Program Course Credits	
26	Non-ACS	26-28
27	ACS	30-32
28	Remaining Open Electives	
29	Courses	Credits
30		
31	Open Elective credits	
32	Non-ACS	20-22
33	ACS	16-18
34	Total Credits Remaining for the 4-Year Degree	60

Credits remaining in the four-year degree

Chemistry B.A. - Non-American Chemical Society Certified

1	Western Connecticut State University	
2	Remaining General Education Courses	
3	Course	Credits
4	If not already met, the student must complete enough additional credits to add up to a	
	total of 40 credits outside the major to meet the Explorations requirement. The	
	<i>Framework30 portion of the community college degree meets 30 of the 40 credits.</i>	
	The student may have used a combination of general education and open elective	
5	Interput und Competency (Explorations/Perpended Competency)	2
5	Intercultural Competency/Explorations/Repeated Competency	3
7	Realth and Wellness/Explorations	3
/ 0	General Education Elective/Explorations/Repeated Competency	0-3
0	General Education Elective/Explorations/Repeated Competency	0-3
9		
10	Written Communication III – embedded in a major course	-
11	Culminating General Education Experience may be satisfied by a major capstone	3
12	General Education Credits	9-15
13	Remaining Major Program Requirements	1
14	Course	Credits
15	CHE 205 Analytical Chemistry Lecture	3
16	CHE 206 Analytical Chemistry Lab	2
17	CHE 300 Physical Chemistry I	4
18	CHE 301 Physical Chemistry II	4
19	CHE 311 Inorganic Chemistry	4
20	CHE 400 Instrumental Analysis Lecture	3
21	CHE 401 Instrumental Analysis Lab	2
22	CHE 250 Chemistry Seminar	.5
23	CHE 250 Chemistry Seminar	.5
24	CHE 250 Chemistry Seminar (optional)	(.5)
25	CHE 250 Chemistry Seminar (optional)	(.5)
26	CHE 297 Cooperative Education Research (12 S.H.)	8-12
	OR	
	CHE 430 Senior Research and choice of one advanced elective from the following:	
	MAT 281 Calculus III	
	MAT 282 Ordinary Differential Equations	
	MAT 272 Introduction to Linear Algebra	
	CHE 415 Medicinal Chemistry	
	CHE 420 Advanced Topics in Organic Chemistry	
	CHE 421 Biochemistry Lecture I	
	CHE 438 Molecular Biochemistry of Nucleic Acids	

27	Program Course Credits	31-36
28	Remaining Open Electives	
29		
30	Open Elective credits	9-14
31	Total Credits Remaining for the 4-Year Degree	60

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Credits remaining in the four-year degree

Chemistry B.A. - American Chemical Society Certified

1	Western Connecticut State University		
2	Remaining General Education Courses		
3	Course	Credits	
4	If not already met, the student 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.		
	The student may have used a combination of general education and open elective		
	credits at the community college to meet more of this minimum requirement.	2	
5	Intercultural Competency/Explorations/Repeated Competency	3	
7	Health and Wellness/Explorations	3	
, 0	General Education Elective/Explorations/Repeated Competency	0-3	
0	General Education Elective/Explorations/Repeated Competency	0-3	
9	Must be taken at WCSU:		
10	Written Communication III – embedded in a major course		
11	Culminating General Education Experience – may be satisfied by a major capstone	3	
12	General Education Credits	9-15	
13	Remaining Major Program Requirements	-	
14	Course	Credits	
15	CHE 205 Analytical Chemistry Lecture	3	
16	CHE 206 Analytical Chemistry Lab	2	
17	CHE 300 Physical Chemistry	4	
18	CHE 301 Physical Chemistry II	4	
19	CHE 311 Inorganic Chemistry	4	
20	CHE 400 Instrumental Analysis Lecture	3	
21	CHE 401 Instrumental Analysis Lab	2	
22	CHE 250 Chemistry Seminar	.5	
23	CHE 250 Chemistry Seminar	.5	
24	CHE 250 Chemistry Seminar (optional)	(.5)	
25	CHE 250 Chemistry Seminar (optional)	(.5)	
25 26	CHE 250 Chemistry Seminar (optional) CHE 421 Biochemistry Lecture I	(.5) 3-4	
25 26 27	CHE 250 Chemistry Seminar (optional) CHE 421 Biochemistry Lecture I CHE 430 Senior Research	(.5) 3-4 4	
25 26 27 28	CHE 250 Chemistry Seminar (optional) CHE 421 Biochemistry Lecture I CHE 430 Senior Research Program Course Credits	(.5) 3-4 4 30-32	
25 26 27 28 29	CHE 250 Chemistry Seminar (optional) CHE 421 Biochemistry Lecture I CHE 430 Senior Research Program Course Credits Remaining Open Electives	(.5) 3-4 4 30-32	
25 26 27 28 29 30	CHE 250 Chemistry Seminar (optional) CHE 421 Biochemistry Lecture I CHE 430 Senior Research Program Course Credits Remaining Open Electives Courses	(.5) 3-4 4 30-32 Credits	
25 26 27 28 29 30 31	CHE 250 Chemistry Seminar (optional) CHE 421 Biochemistry Lecture I CHE 430 Senior Research Program Course Credits Remaining Open Electives Courses Open Elective credits	(.5) 3-4 4 30-32 Credits 13-15	