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CSCU Chemistry Transfer Pathway
2021-2022

Contents

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.

CSCU Pathway Transfer A.A. Degree: Chemistry 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 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 Alt: PHY 121***	Calculus-Based Physics I General Physics I	4 credits
20	PHY 222 Alt: PHY 122***	Calculus-Based Physics II General Physics II	4 credits
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 beginning work on a minor (required at CCSU in some majors – up to 9 credits can be completed at the community college).		
24	**Pathway30 Total**		**29 credits**

***Students who will transfer into an ACSC program or WCSU's non-ACS should take PHY 221 and PHY 222.

25	**Chemistry Pathway60 Total**		**62 credits**

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. - General Program

A minor is not required for this degree

There are no additional requirements for admission to this program.

1	Community Colleges:			CCSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education 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 Reasoning	MAT 254 Calculus I	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 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 Sciences	3
24				Study Area III: Behavioral Sciences	3
25				Skill Area II: Math / Stat / Computer Science	3

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

			CHEM 455 Biochemistry Lab **or** CHEM 462 Inorganic Chemistry Lab	
38			CHEM 432 Chemistry Seminar	2
39			CHEM 438 Undergraduate Research	1-6
40	PHY 221 Calculus-Based Physics I Alt: PHY 121 General Physics I***	4	PHYS 125 University Physics I Alt: PHYS 121 General Physics I	4
41	PHY 222 Calculus-Based Physics II Alt: PHY 122 General Physics II ***	4	PHYS 126 University Physics II Alt: PHYS 122 General Physics II	4
42	MAT 256 Calculus II	4	MATH 221 Calculus II	4
43	**Program Course Credits:**	**20**		**40-50**
44	**Open Electives**			
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 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 Degree**	**120**

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

There are no additional requirements for admission to this program.

1	Community Colleges:			CCSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education 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 I	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 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 Sciences	3
24				Study Area III: Behavioral Sciences	3
25				Skill Area II: Math / Stat / Computer Science	3
26				Skill Area III – Foreign Language Proficiency See requirements here. If the requirement has been met in	6

			whole or in part, general education and open elective credits will adjust accordingly.	
27	**General Education Credits:**	**33**		**54**
28	**Major Program Courses**			
29	CHE 211 Organic Chemistry I	4	CHEM 210 Foundations of Organic Chemistry CHEM 211 Foundations of Organic Chemistry Laboratory	3 1
30	CHE 212 Organic Chemistry II	4	CHEM 212 Organic Synthesis CHEM 213 Organic Synthesis Laboratory	3 1
31			CHEM 238 Introduction to Research	1-6
32			CHEM 260 Foundations of Inorganic Chemistry	3
33			CHEM 316 Spectrometric Identification of Organic Compounds	3
34			CHEM 321 Physical Chemistry of Thermodynamics & Kinetics	3
35			CHEM 322 Physical Chemistry of Quantum & Statistical Mechanics	3
36			CHEM 323 Physical Chemistry Laboratory	1
37			CHEM 354 Foundations of Biochemistry	3
38			CHEM 402 Instrumental Methods in Analytical Chemistry	4
39			CHEM 432 Chemistry Seminar	2
39			CHEM 438 Undergraduate Research	1-6
40			CHEM 455 Biochemistry Lab	1
41			CHEM 460 Inorganic Symmetry and Spectroscopy	3
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 II	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 following: MATH 218 Discrete Mathematics MATH 222 Calculus III MATH 226 Linear Algebra and Probability for Engineers	4 (3)

			MATH 228 Introduction to Linear Algebra CS 151 Computer Science I	
47	**Program Course Credits:**			**62-72**
48				
49				
50	**Open Electives**			
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**

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.

There are no additional requirements for admission to this program.

1	Community Colleges:			SCSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education 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 Credits (33):**				**33**
19	**Pathway30**				
20	**Additional General Education Courses**				
21				*Select three of the following four areas:*	9
22				American Experience	
23				Creative Drive	
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 Laboratory Safety	3

			CHE 496 Chemistry Seminar	
29	**General Education Credits:**			**45**
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 240 Quantitative Analysis I	4
34			CHE 370 Physical Chemistry I	3
35			CHE 372 Physical Chemistry I Laboratory	1
36			CHE 371 Physical Chemistry II	3
37			CHE 373 Physical Chemistry II Laboratory	1
38			CHE 435 Inorganic Chemistry	3
39			CHE 436 Inorganic Chemistry Laboratory	1
40			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 III	4
46	**Program Course Credits (non ACS certified):**			**46-48**
47	**Program Course Credits (with ACS certification):**			**50-52**
48	**Open Electives**			
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 Degree**	**120**

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

There are no additional requirements for admission to this program.

1	Community 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 General Education 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 having met 8 competencies in Foundations, one repeat, and 30 or the 40 credits of Explorations.*				
21				General Education Elective/Explorations	3

22				General Education Elective/Explorations	3
23				Intercultural Competency/Explorations	3
24				Health and Wellness	3
25				*Must be taken at WCSU:*	
26					
27				Written Communication III – embedded in a major course	
28				Culminating General Education Experience – may be satisfied by a major capstone	3
29					
30	**General Education Credits:**		33		**48**
31	**Major Program Courses**				
32	CHE 211 Organic Chemistry I		4	CHE 210 Organic Chemistry I	4
33	CHE 212 Organic Chemistry II		4	CHE 211 Organic Chemistry II	4
34				CHE 205 Analytical Chemistry Lecture	3
35				CHE 206 Analytical Chemistry Lab	2
36				CHE 300 Physical Chemistry I	4
37				CHE 301 Physical Chemistry II	4
38				CHE 311 Inorganic Chemistry	4
39				CHE 400 Instrumental Analysis Lecture	3
39				CHE 401 Instrumental Analysis Lab	2
40				CHE 250 Chemistry Seminar	.5
41				CHE 250 Chemistry Seminar	.5
42				CHE 250 Chemistry Seminar (optional)	(.5)
43				CHE 250 Chemistry Seminar (optional)	(.5)
44				CHE 297 Cooperative Education Research (12 S.H.) **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	8-12

			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 II	4	PHY 111 General Physics II	4
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 College**	60-62	**Total Credits for the 4-Year Degree**	**120**

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

There are no additional requirements for admission to this program.

1	Community 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 General Education 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 having met 9 competencies in Foundations, one repeat, and 30 or the 40 credits of Explorations.*				
21				General Education Elective/Explorations	3
22				General Education Elective/Explorations	3

23				Intercultural Competency/Explorations	3
24				Health and Wellness	3
25				*Must be taken at WCSU:*	
26					
27				Written Communication III – embedded in a major course	0
28				Culminating General Education Experience – may be satisfied by a major capstone	3
29	**General Education Credits:**				**48**
30	**Major Program 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 Lecture	3
34				CHE 206 Analytical Chemistry Lab	2
35				CHE 300 Physical Chemistry I	4
36				CHE 301 Physical Chemistry II	4
37				CHE 311 Inorganic Chemistry	4
38				CHE 400 Instrumental Analysis Lecture	3
39				CHE 401 Instrumental Analysis Lab	2
39				CHE 250 Chemistry Seminar	.5
40				CHE 250 Chemistry Seminar	.5
41				CHE 250 Chemistry Seminar (optional)	(.5)
42				CHE 250 Chemistry Seminar (optional)	(.5)
43				CHE 421 Biochemistry Lecture I	3-4
44				CHE 430 Senior Research	4
45	PHY 221 Calculus-Based Physics I		4	PHY 110 General Physics I	4
46	PHY 222 Calculus-Based Physics II		4	PHY 111 General Physics II	4
47	MAT 256 Calculus II		4	MAT 182 Calculus II	4
48	**Program Course Credits:**		**20**		**50-52**
49	**Open Electives**				
50	**Open Elective credits:**		**7**		**20-22**
51	**Total Credits at the Community College**		**60**	**Total Credits for the 4-Year Degree**	**120**

Transfer Pathway and Degree Program

Credits remaining in the four-year degree

Chemistry B.S. – General Program

A minor is not required for this degree

There are no additional requirements for admission to this program.

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: See requirements here. If the requirement has been met in whole or in part, general education and open elective credits will adjust accordingly.	6
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: CHEM 320 Biophysical Chemistry CHEM 321 Physical Chemistry of Thermodynamics & Kinetics CHEM 322 Physical Chemistry of Quantum & Statistical Mechanics	3
17	Choose 3 credits from: CHEM 354 Foundations of Biochemistry CHEM 406 Environmental Chemistry CHEM 485 Topics in Chemistry	3
18	Choose 4 credits from: CHEM 402 Instrumental Methods in Analytical Chemistry **or** CHEM 460 Inorganic Symmetry and Spectroscopy with CHEM 323 Physical Chemistry Lab **or** CHEM 455 Biochemistry Lab **or** CHEM 462 Inorganic Chemistry Lab	 4 (3) (1)
19	CHEM 432 Chemistry Seminar	2
20	CHEM 438 Undergraduate Research	1-6
21	**Program Course Credits**	**20-30**
22	**Remaining Open Electives**	
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**

Transfer Pathway and Degree Program

Credits remaining in the four-year degree

Chemistry B.S. – American Chemical Society Certified

A minor is not required for this degree

There are no additional requirements for admission to this program.

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: See requirements here. If the requirement has been met in whole or in part, general education and open elective credits will adjust accordingly.	6
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 MATH 222 Calculus III MATH 226 Linear Algebra and Probability for Engineers MATH 228 Introduction to Linear Algebra CS 151 Computer Science I	4 (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**

Transfer Pathway and Degree Program

Credits remaining in the four-year degree

Chemistry B.S.

There are no additional requirements for admission to this program.

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 CHE 301 The preparation of Scientific Documents for Chemistry CHE 445 Chemical Hazards and Laboratory Safety CHE 496 Chemistry Seminar	3
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**

Transfer Pathway and Degree Program

Credits remaining in the four-year degree

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

There are no additional requirements for admission to this program.

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.*	
5	Intercultural Competency/Explorations/Repeated Competency	3
6	Health and Wellness/Explorations	3
7	General Education Elective/Explorations/Repeated Competency	0-3
8	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 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.) **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	8-12

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**

Transfer Pathway and Degree Program

Credits remaining in the four-year degree

Chemistry B.A. - American Chemical Society Certified

There are no additional requirements for admission to this program.

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.*	
5	Intercultural Competency/Explorations/Repeated Competency	3
6	Health and Wellness/Explorations	3
7	General Education Elective/Explorations/Repeated Competency	0-3
8	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 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 421 Biochemistry Lecture I	3-4
27	CHE 430 Senior Research	4
28	**Program Course Credits**	**30-32**
29	**Remaining Open Electives**	
30	**Courses**	**Credits**
31	**Open Elective credits**	**13-15**
32	**Total Credits Remaining for the 4-Year Degree**	**60**