Archives:
AY 2016-2017
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CSCU Biology Transfer Pathway
2020-2021

Contents:

Changes

Changes from 2016/2017
(a) 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;
(b) clarified Additional General Education I & II;
(c) clarified BIO 2xx options in PATHWAY30; and,
(d) added IDS 101 to COSC General Education requirements.

Changes made 02/12/2018

- ECSU. Page 17, line 32, receiving course number corrected for items 4,5, 7, & 8
- ECSU. Page 18, line 40, course titles corrected for BIO 420, 424, and 458
- ECSU. Page 22, line 33, receiving course number corrected for items 4. 5, 7, & 8
- ECSU. Page 23-4, line 45, course titles corrected for BIO 420, 424, & 458
- ECSU. Page 24, line 47, added BIO 344
- ECSU. Page 48, line 18, course titles corrected for BIO 420, 424, and 458
- ECSU. Page 51, line 22, course titles corrected for BIO 420, 242 & 458
- ECSU. Page 51, line 24, added BIO 344

- SCSU. Page 27, line 34, receiving course numbers corrected for items 2 & 3
- SCSU. Page 31, line 35, receiving course numbers corrected for items 2 & 3, and they are received on line 56 not 35
- SCSU. Page 27, line 27, added 3 credits for Capstone
- SCSU. Page 29, line 52, adjusted Open Elective credits
- SCSU. Page 31, line 28, added 3 credits for Capstone
- SCSU. Page 33, line 56, adjusted Open Elective credits
- SCSU. Page 53, line 10, added 3 credits for Capstone
- SCSU. Page 54, line 28, adjusted Open Elective credits
- SCSU. Page 55, line 10, added 3 credits for Capstone
- SCSU. Page 56, line 32, adjusted Open Elective credits

Changes made 03/26/2018:

- Added link to 2017/-2018 program sheet
- Updated watermark to AY 2018-2019

Changes made 03/28/2018

- Corrections made to COSC templates

Changes made 04/03/2018

- Updated CCSU programs to reflect requirements in 2017 curriculum sheets/catalog

Changes made 04/17/2018

- Updated WCSU programs to reflect changes in general education requirements

Changes made 05/15/2018

- SCSU. p29, line 31/32; p33, line 31/32; p55, line 14/15; BIO 122 received as BIO 103 – Botany
- SCSU. p30, line 37; p34,l ine 43; p55, line 18; p57, line 22: Added BIO 296 and BIO 236
- SCSU. p31, line 41; p35, line 47; p56, line 23; p58, line 26: Added BIO 497, HON 495, & BIO 499; corrected to 3-4 credits
- SCSU. p31, line 45. Correct to PHY 200
- SCSU. p57, line 18. BIO 103 removed

Changes made 07/26/2018

- COSC program removed; COSC does not offer enough of the courses for the program

Changes made 10/10/2018

- MCC updated 200 level course offerings – added BIO 220 and BIO 262

Changes made 10/31/2018

- Corrected errors to SCSU pages

Change made 11/1/2018

- GCC: added Bio 262 Principles of Genetics to the list of options

No changes for AY 2020/21 3/05/2020

Changes made 5/26/2021

- Added PHY 221 and PHY 222 as options to page for line 20 and 21

Learning Outcomes:

Biology Outcomes and Competencies for the CC's based on Vision and Change Recommendations: Approved by Community College faculty at the April 29, 2016 C3BIOS meeting and by the TAP Biology Pathway Group at the October 14, 2016 meeting.

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

1. the mechanism by which the diversity of life evolved over time.
2. the basic units of structure that define the function of all living things.
3. how information is stored and exchanged, within and among organisms.
4. how living things transform energy and matter.
5. how living systems are interconnected and interacting.

Competencies: Student completing the CSCU Biology Pathway and earning an Associate's Degree will be able to:

1. Apply the process of science
2. Use quantitative reasoning
3. Use modeling and simulation to describe living systems
4. Apply concepts and knowledge from within and outside of biology in order to interpret biological phenomena
5. Communicate biological concepts and interpretations
6. Discuss the relationship between Science and Society

CSCU Pathway Transfer A.A. Degree: Biology 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	BIO 121 General Biology I (C- or above)	4 credits
6	Scientific Knowledge & Understanding	CHE 121 General Chemistry I	4 credits
7	Quantitative Reasoning	MAT 185 Trigonometry (NVCC) 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 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	BIO 122	General Biology II (C- or above)	4 credits
17	Select two courses (See the different four-year programs for how each course will be received.) 1. BIO 208 (HCC) 2. BIO 211 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) 3. BIO 212 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) 4. BIO 220 (ACC, MCC (Cross listed as BIO 220/CHE220 at MCC))	 Forensic Science with Lab Anatomy & Physiology I Anatomy & Physiology II Biochemistry Molecular Biotechniques	8 credits

	5. BIO 222 (MXCC) 6. BIO 225 (NVCC) 7. BIO 227 (NVCC) 8. BIO 235 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) 9. BIO 262 (GCC, MCC, NVCC, TRCC) 10. BIO 263 (MXCC, NCCC) 11. BIO 264 (QVCC) 12. BIO 270 (MXCC, NCCC, QVCC, TRCC) 13. BIO 272 (NCC) 14. BIO 275 (QVCC)	Introduction to Biotechnology Biotechnology II Microbiology Genetics and Lab Molecular Genetics Molecular and Cellular Biology Ecology Marine Ecology Entomology	
18			
19	CHE 122	General Chemistry II	4 credits
20	PHY 121 OR CHE 211 OR PHY 221	General Physics I Organic Chemistry I Calculus-Based Physics I	4 credits
21	PHY 122 OR CHE 212 OR PHY 222	General Physics II Organic Chemistry II Calculus-Based Physics II	4 credits
22	MAT 254 OR Additional General Education Elective I: Creativity OR Additional General Education Elective II: Global Knowledge	Calculus I General Education Elective General Education Elective If an additional General Education elective is chosen, it cannot be used to fulfill a FRAMEWORK30 requirement.	3-4 credits
23	*Unrestricted Electives*		0 credits
34	**Pathway30 Total**		**27-28 credits**

25	**Biology Studies Pathway Total**		**60-61 credits***

*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 60-61 credits/contact hours.

Transfer Pathway and Degree Program
Central Connecticut State University
General Biology B.S.
All biology courses must be completed with a C- or above.

1	Community Colleges:			CCSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education Requirements**				
5	**Competency:**				
6	**Section A**				
7	Written I	ENG*101 English Composition	3	ENG 110	3
8	Written II	Gen Ed Elective	3	Skill Area I Communication Skills	3
9	Scientific Reasoning	BIO*121 General Biology I	4	Study Area IV Natural Sciences: BIO 121 General Biology I	4
10	Scientific Knowledge	CHE*121 General Chemistry I	4	Study Area IV Natural Sciences: CHEM 161 General Chemistry and CHEM 162 General Chemistry Lab 1	4
11	Quantitative	MAT* 185 Trigonometry (NVCC) MAT*186 Precalculus	4	Skill Area II Mathematics: MATH 119 Pre-Calculus with Trigonometry	4
12	Historical Knowledge	Gen Ed Elective	3	Study Area II History Requirement	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 & Humanities	3
15	**Section B**				
16	Competency:	Gen Ed Elective	3	Skill 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	Select one 1. Additional General Education I: Creativity 2. Additional General Education II: Global Knowledge 3. MAT 254 Calculus I		3-4	Will be received as 1. Study Area I—Arts and Humanities (line 23) 2. Study Area II—Social Sciences (line 24) 3. MAT 152 Calculus (line 26)	
22				Study Area I – Literature	3
23				Study Area I – Arts and Humanities	3
24				Study Area II – Social Sciences	3

25			Study Area III – Behavioral Sciences	3
26			Skill Area II – Math/Stat/ Comp Sci • MATH 124 Applied Calculus with Trigonometry (4) OR • MATH 115 Trigonometry (3) and MATH 125 Applied Calculus (3) OR • MATH 152 Calculus I (4)	4-6
27			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
28	**General Education Credits:**	**36-37**		**51-52**
29	**Major Program Courses**			
30	BIO*122 General Biology II	4	BIO 122 General Biology II	4
	Students will complete one of the following sequences at the community college, fulfilling either lines 31/32 or lines 33/45. PHY* 121 General Physics I PHY* 122 General Physics II OR CHE*211 Organic Chemistry I CHE*212 Organic Chemistry II OR PHY 221 Calculus-Based Physics I PHY 222 Calculus-Based Physics II	8		
31			PHY 121 General Physics I	4
32			PHY 122 General Physics II	4
33			CHEM 210/211 Fdns of Organic Chem/Lab	4
34	CHE* 122 General Chemistry II	4	CHEM 200/201 Fdns of Analytical Chem/ Lab	4
35	Select two courses 1. BIO 208 (HCC) Forensic Science with Lab	8	1. BIO 2xx, line 39 2. BIO 318, line 39	

	2. BIO 211 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology I 3. BIO 212 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology II 4. BIO 220 (ACC, MCC (cross listed with CHE 220 at MCC)) Biochemistry 5. BIO 222 (MXCC) Molecular Biotechniques 6. BIO 225 (NVCC) Intro to Biotechnology 7. BIO 227 (NVCC) Biotechnology II 8. BIO 235 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Microbiology 9. BIO 262 (GCC, MCC. NVCC, TRCC) Genetics and Lab 10. BIO 263 (MXCC, NCCC)Molecular Genetics 11. BIO 264 (QVCC) Molecular and Cellular Biology 12. BIO 270 (MXCC, NCCC, QVCC, TRCC) Ecology 13. BIO 272 (NCC) Marine Ecology 14. BIO 275 (QVCC) Entomology		3. BIO 319, line 39 4. BIO 2xx, line 39 5. BMS 316, line 39 6. BIO 200, line 36 7. BIO 200, line 36 8. BIO 2xx, line 39 9. BIO 2xx, line 39 10. BIO 2xx, line 39 11. BIO 2xx, line 39 12. BIO 2xx, line 36 13. BIO 2xx, line 39 14. BIO 2xx, line 39	
36			BIO 200 Integrative Biology (May have been taken at the community college as BIO 225 Introduction to Biotechnology (NVCC) or BIO 270 Ecology (MXCC, NCCC, QVCC, TRCC). See line 34)	(4)
37			BIO 290 Biology Research Experience I	2
38			BIO 390 Biology Research Experience II or 391 Internship in Biology	1-6
39			12-17 credits of BIO electives to add up to 32 total credits in BIO/BMS courses (except for BIO 211)	12-17
40	**Program Course Credits:**	**24**		**52**
41	**Minor Course Credits:**		A minor is not required for this major.	
42	**Open Electives**			

43	If CHE 212 Organic Chemistry II was taken at the community college	0-4	CHEM 212/213 Organic Synthesis/Lab	0-4
44	**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.**			
45	**Open Elective credits:**	**0**		**16-17**
49	**Total Credits at the Community College**	**60-61**	**Total Credits for the 4-Year Degree**	**120**

Transfer Pathway and Degree Program
Central Connecticut State University
Biology – Ecology, Biodiversity, and Evolutionary Biology B.S.
All biology courses must be completed with a C- or above.

1	Community Colleges:			CCSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education Requirements**				
5	**Competency:**				
6	**Section A**				
7	Written I	ENG*101 English Composition	3	ENG 110	3
8	Written II	Gen Ed Elective	3	Skill Area I Communication Skills	3
9	Scientific Reasoning	BIO*121 General Biology I	4	Study Area IV Natural Sciences: BIO 121 General Biology I	4
10	Scientific Knowledge	CHE*121 General Chemistry I	4	Study Area IV Natural Sciences: CHEM 161 General Chemistry and CHEM 162 General Chemistry Lab 1	4
11	Quantitative	MAT* 185 Trigonometry (NVCC) MAT*186 Precalculus	4	Skill Area II Mathematics: MATH 119 Pre-Calculus with Trigonometry	4
12	Historical Knowledge	Gen Ed Elective	3	Study Area II History Requirement	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 & Humanities	3
15	**Section B**				
16	Competency:	Gen Ed Elective	3	Skill Area IV University Requirement	3
17	Competency:	Gen Ed Elective	3	Study Area III Behavioral Sciences	3
18	**Framework30 Credits (30-31):**				
19	**Pathway30**				
20	**Additional General Education Courses**				
21	Select one 1. Additional General Education I: Creativity 2. Additional General Education II: Global Knowledge 3. MAT 254 Calculus I		3-4	Will be received as 1. Study Area I—Arts and Humanities (line 23) 2. Study Area II—Social Sciences (line 24) 3. MAT 152 Calculus (line 26)	
22				Study Area I – Literature	3
23				Study Area I – Arts and Humanities	3
24				Study Area II – Social Sciences	3

25			Study Area III – Behavioral Sciences	3
26			Skill Area II – Math/Stat/ Comp Sci • MATH 124 Applied Calculus with Trigonometry (4) OR • MATH 115 Trigonometry (3) and MATH 125 Applied Calculus (3) OR • MATH 152 Calculus I (4)	4-6
27			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
28	**General Education Credits:**	**36-37**		**51-52**
29	**Major Program Courses**			
30	BIO*122 General Biology II	4	BIO 122 General Biology II	4
31	CHE* 122 General Chemistry II	4	CHEM 200/201 Fdns of Analytical Chem/ Lab OR CHEM 260/201 Fdns of Inorganic Chem/ Lab	4
32	Students will complete one of the following sequences at the community college, fulfilling either lines 31/32 or lines 33/34. PHY* 121 General Physics I PHY* 122 General Physics II OR CHE*211 Organic Chemistry I CHE*212 Organic Chemistry II OR PHY 221 Calculus-Based Physics I PHY 222 Calculus-Based Physics II	8		
33			PHY 121 General Physics I	4
34			PHY 122 General Physics II	4
35			CHEM 210/211 Fdns of Organic Chem/Lab	4
36			CHEM 212/213 Organic Synthesis/Lab	(4)

			This course is not required in the program and will be received as an open/unrestricted elective line	
37	Select two courses 1. BIO 208 (HCC) Forensic Science with Lab 2. BIO 211 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology I 3. BIO 212 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology II 4. BIO 220 (ACC, MCC (Cross listed with CHE 220 at MCC)) Biochemistry 5. BIO 222 (MXCC) Molecular Biotechniques 6. BIO 225 (NVCC) Intro to Biotechnology 7. BIO 227 (NVCC) Biotechnology II 8. BIO 235 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Microbiology 9. BIO 262 (GCC, MCC, NVCC, TRCC) Genetics and Lab 10. BIO 263 (MXCC, NCCC)Molecular Genetics 11. BIO 264 (QVCC) Molecular and Cellular Biology 12. BIO 270 (MXCC, NCCC, QVCC, TRCC) Ecology 13. BIO 272 (NCC) Marine Ecology 14. BIO 275 (QVCC) Entomology	8	Will be received as 1. BIO 2xx, line 50 2. BIO 318, line 50 3. BIO 319, line 50 4. BIO 2xx, line 50 5. BIO 2XX, line 50 6. BIO 200, line 38 7. BIO 200, line 38 8. BIO 2xx, line 50 9. BIO 2xx, line 50 10. BIO 2xx, line 50 11. BIO 2xx, line 50 12. BIO 2xx, line 38 13. BIO 2xx, line 50 14. BIO 2xx, line 50	
38			BIO 200 Integrative Biology (May have been taken at the community college as BIO 225 Introduction to Biotechnology (NVCC) or BIO 270 Ecology (MXCC, NCCC, QVCC, TRCC). See line 34)	(4)
39			BIO 290 Biology Research Experience I	2
40			Biodiversity Elective – Choose from: BIO 315 Microbial Ecology BIO 322 Vertebrate Zoology BIO 326 Mushrooms, Mosses, & More	3-4

			BIO 327 Vascular Plants BIO 420 Ornithology BIO 421 Marine Invertebrate Biology BIO 425 Biology of Marine and Freshwater Algae BIO 444 Plant Taxonomy BIO 469 Entomology	
41			Ecology/Evolution Elective – Choose from: BIO 402 Population Genetics BIO 405 Ecology BIO 434 Ecology of Inland Waters BIO 440 Evolution BIO 480 Animal Behavior	3-4
42			EBE Specialization Elective – Choose from: BIO 230 Natural History BIO 402 Population Genetics BIO 315 Microbial Ecology BIO 322 Vertebrate Zoology BIO 326 Mushrooms, Mosses & More BIO 327 Vascular Plants BIO 405 Ecology BIO 410 Ecological Physiology BIO 420 Ornithology BIO 421 Marine Invertebrate Biology BIO 425 Biology of Marine & Freshwater Algae BIO 434 Ecology of Inland Waters BIO 438 Aquatic Pollution BIO 440 Evolution BIO 444 Plant Taxonomy BIO 470 Field Studies in Biology BIO 480 Animal Behavior BIO 489 Vertebrate Dissection *BIO 490 Topics in Biology *BIO 491 Advanced Problems in Biology *BIO 499 Undergraduate Thesis in Biology *To be considered in the E/B/E group, these courses must have a topic approved by the E/B/E faculty advisor.	2-4

43			BIO 390 Biology Research Experience II or 391 Internship in Biology	1-6
44				
45	**Program Course Credits:**	**24**		**43-51**
46	**Minor Course Credits:**		A minor is not required for this major.	
47	**Open Electives**			
48	CHEM 212 Organic Chemistry II – if taken at the community college	0-4	CHEM 212/213 Organic Synthesis/Lab	
49	**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.**			
50	**Open Elective credits:**	**0**		**13-26**
51	**Total Credits at the Community College**	**60-61**	**Total Credits for the 4-Year Degree**	**120**

Transfer Pathway and Degree Program
Central Connecticut State University
Biology – Environmental Science B.S.
All biology courses must be completed with a C- or above.

1	Community Colleges:			CCSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education Requirements**				
5	**Competency:**				
6	**Section A**				
7	Written I	ENG*101 English Composition	3	ENG 110	3
8	Written II	Gen Ed Elective	3	Skill Area I Communication Skills	3
9	Scientific Reasoning	BIO*121 General Biology I	4	Study Area IV Natural Sciences: BIO 121 General Biology I	4
10	Scientific Knowledge	CHE*121 General Chemistry I	4	Study Area IV Natural Sciences: CHEM 161 General Chemistry and CHEM 162 General Chemistry Lab 1	4
11	Quantitative	MAT* 185 Trigonometry (NVCC) MAT*186 Precalculus	4	Skill Area II Mathematics: MATH 119 Pre-Calculus with Trigonometry	4
12	Historical Knowledge	Gen Ed Elective	3	Study Area II History Requirement	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 & Humanities	3
15	**Section B**				
16	Competency:	Gen Ed Elective	3	Skill Area IV University Requirement	3
17	Competency:	Gen Ed Elective	3	Study Area III Behavioral Sciences	3
18	**Framework30 Credits (30-31):**				
19	**Pathway30**				
20	**Additional General Education Courses**				
21	Select one 1. Additional General Education I: Creativity 2. Additional General Education II: Global Knowledge 3. MAT 254 Calculus I		3-4	Will be received as 1. Study Area I—Arts and Humanities (line 23) 2. Study Area II—Social Sciences (line 24) 3. MAT 152 Calculus (line 26)	
22				Study Area I – Literature	3
23				Study Area I – Arts and Humanities	3
24				Study Area II – Social Sciences	3

25			Study Area III – Behavioral Sciences	3
26			Skill Area II – Math/Stat/ Comp Sci • MATH 124 Applied Calculus with Trigonometry (4) OR • MATH 115 Trigonometry (3) and MATH 125 Applied Calculus (3) OR • MATH 152 Calculus I (4)	4-6
27			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
28	**General Education Credits:**	**36-37**		**51-52**
29	**Major Program Courses**			
30	BIO*122 General Biology II	4	BIO 122 General Biology II	4
31	CHE* 122 General Chemistry II	4	CHEM200/201 Fdns of Analytical Chem/ Lab	4
32	Students will complete one of the following sequences at the community college, fulfilling either lines 33/34 or lines 35/36. PHY* 121 General Physics I PHY* 122 General Physics II OR CHE*211 Organic Chemistry I CHE*212 Organic Chemistry II OR PHY 221 Calculus-Based Physics I PHY 222 Calculus-Based Physics II	8		
33			PHY 121 General Physics I	4
34			PHY 122 General Physics II	4
35			CHEM 210/211 Fdns of Organic Chem/Lab	4
36			CHEM 212/213 Organic Synthesis/Lab OR CHEM 456 Toxicology	4
37	Select two courses 1. BIO 208 (HCC) Forensic Science with Lab	8	Will be received as 1. BIO 2xx, line 53	

	2. BIO 211 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology I 3. BIO 212 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology II 4. BIO 220 (ACC, MCC (cross listed with CHE 220 at MCC)) Biochemistry 5. BIO 222 (MXCC) Molecular Biotechniques 6. BIO 225 (NVCC) Intro to Biotechnology 7. BIO 227 (NVCC) Biotechnology II 8. BIO 235 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Microbiology 9. BIO 262 (GCC, MCC, NVCC, TRCC) Genetics and Lab 10. BIO 263 (MXCC, NCCC)Molecular Genetics 11. BIO 264 (QVCC) Molecular and Cellular Biology 12. BIO 270 (MXCC, NCCC, QVCC, TRCC) Ecology 13. BIO 272 (NCC) Marine Ecology 14. BIO 275 (QVCC) Entomology		2. BIO 318, line 53 3. BIO 319, line 53 4. BIO 2xx, line 53 5. BMS 316, line 53 6. BIO 200, line 35 7. BIO 200, line 53 8. BIO 2xx, line 53 9. BIO 2xx, line 53 10. BIO 2xx, line 53 11. BIO 2xx, line 53 12. BIO 2xx, line 35 13. BIO 2xx, line 53 14. BIO 2xx, line 53	
38			BIO 200 Integrative Biology (May have been taken at the community college as BIO 225 Introduction to Biotechnology (NVCC) or BIO 270 Ecology (MXCC, NCCC, QVCC, TRCC). See line 34)	4
39			BIO 290 Biology Research Experience I	2
40			BIO 390 Biology Research Experience II or 391 Internship in Biology	1-6
41			BIO 436 Environmental Resources and Management (3) OR BIO 438 Aquatic Pollution (4)	3-4
42			Choose one: BIO 315 Microbial Ecology BIO 322 Vertebrate Zoology BIO 326 Mushrooms, Mosses, &	3-4

			More BIO 327 Vascular Plants BIO 420 Ornithology BIO 421 Marine Invertebrate Biology BIO 425 Biology of Marine and Freshwater Algae BIO 444 Plant Taxonomy	
43			Choose one: BIO 331 Neurobiology BIO 410 Ecological Physiology BIO 412 Human Physiology (BIO 413 Human Physiology Laboratory is optional) BIO 449 Plant Physiology	3-4
44			Choose one: BIO 405 Ecology BIO 434 Ecology of Inland Waters	4
45			CHEM 406 Environmental Chemistry	3
46			Choose one: ESCI 121 Physical Geology ESCI 450 Environmental Geology	3-4
47	**Program Course Credits:**	**24**		**55-58**
48	**Minor Course Credits:**		A minor is not required for this major.	
49	**Open Electives**			
50	**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.**			
51	**Open Elective credits:**	**0**		**10-14**
52	**Total Credits at the Community College**	**60-61**	**Total Credits for the 4-Year Degree**	**120**

Transfer Pathway and Degree Program

Eastern Connecticut State University

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

Biology B.A.

Both BIO 120 and BIO 130 must be successfully completed with a grade of C- or better prior to starting BIO 220 or BIO 230. Both BIO 220 and BIO 230 must be successfully completed with a grade of C- or better before starting on the required upper-level courses.

1	Community Colleges:			ECSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education Requirements**				
5	**Competency:**				
6	**Section A**				
7	Written I	ENG*101 English Composition	3	T1: College Writing	3
8	Written II	Gen Education Elective	3	T1: Lit &Thought	3
9	Scientific Reasoning	BIO*121 General Biology I	4	T1: Natural Sciences – BIO 120 Organismal Biology w/Lab	4
10	Scientific Knowledge	CHE*121 General Chemistry I	4	T2: Natural Sciences – CHE 210/212 General Chemistry I w/Lab	4
11	Quantitative	MAT* 185 Trigonometry (NVCC) MAT*186 Precalculus	4	T1: Math – MAT 130 Precalculus	4
12	Historical Knowledge	Gen Ed Elective	3	T1: Historical Perspectives	3
13	Social Phenomena	Gen Ed Elective	3	T1SS: Social Sciences	3
14	Aesthetic Dimensions	Gen Ed Elective	3	T1A: Arts in Context	3
15	**Section B**				
16	Competency:	Gen Ed Elective	3	FYI 100	3
17	Competency:	Gen Ed Elective	3	Health and Wellness	3
18	**Framework30 Credits (30-31):**				**33**
19	**Pathway30**				
20	**Additional General Education Courses**				
21	Select one 1. Additional General Education I: Creativity 2. Additional General Education II: Global Knowledge 3. MAT 254 Calculus I		3-4	Will be received as 1. T2 Creative Expressions (line 24) 2. T2 Individuals and Society (line 23) 3. MAT 243 fulfilling T2 Applied Information Technologies requirements (line 25)	

22			T2 Cultural Perspectives	3
23			T2 Individuals and Societies	3
24			T2 Creative Expressions	3
25			T2 Applied Information Technologies (Fulfilled by either MAT 216 Statistical Data Analysis OR MAT 254 line 21 within the Transfer Ticket degree)	3 or 4
26			Tier 3 Capstone – BIO 466 Senior Seminar	3
27			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
28	**General Education Credits:**	**36-37**		**54-55**
29	**Major Program Courses**			
30	BIO*122 General Biology II	4	BIO 130 Ecology with Lab	4
31	CHE* 122 General Chemistry II	4	CHEM 211 General Chemistry II (3) And CHEM 213 General Chemistry II Lab (1)	4
32	PHY* 121 General Physics I / PHY 221 Calculus Based Physics I OR CHE*211 Organic Chemistry I	4	PHY 204 General Physics I with Lab (line 35) OR CHE 216 Organic Chemistry I with lab (line 46)	
33	Select two courses 1. BIO 208 (HCC) Forensic Science with Lab 2. BIO 211 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology I 3. BIO 212 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology II 4. BIO 220 (ACC, MCC (Cross listed with CHE 220 at MCC)) Biochemistry 5. BIO 222 (MXCC) Molecular Biotechniques 6. BIO 225 (NVCC) Intro to Biotechnology 7. BIO 227 (NVCC) Biotechnology II	8	Will be received as 1. BIO 2xx, line 48 2. HSC 318, line 48 3. HSC 319, line 48 4. BIO 422, line 48 5. BIO 450, line 33 6. BIO 2xx, line 48 7. BIO 450, line 48	

	8. BIO 235 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Microbiology 9. BIO 262 (GCC, MCC, NVCC, TRCC) Genetics and Lab 10. BIO 263 (MXCC, NCCC)Molecular Genetics 11. BIO 264 (QVCC) Molecular and Cellular Biology 12. BIO 270 (MXCC, NCCC, QVCC, TRCC) Ecology 13. BIO 272 (NCC) Marine Ecology 14. BIO 275 (QVCC) Entomology		8. BIO 334, line 48 9. BIO 2xx, line 48 10. BIO 304 + 314, line 43 11. BIO 2xx, line 48 12. BIO 308, line 43 13. BIO 2xx, line 48 14. BIO 324, line 42	
34			BIO 334 General Microbiology (from line 32)	4
35	PHY* 122 General Physics II / PHY 222 Calculus Base Physics II OR CHE*212 Organic Chemistry II		See line 47	
36			PHY 204 General Physics I with Lab	4
37			BIO 220 Cell Biology	4
38			BIO 230 Genetics	4
39				
40				
41			300's or 400's level **Cell and Molecular Biology** elective from the following: BIO 330 Cell Biology w/Lab BIO 420 Microscopy w/Lab BIO 422 Research Methods Molecular Bio w/Lab BIO 424 Biological Chemistry w/lab BIO 426 Biology of Cancer BIO 428 Virology w/Lab BIO 430 Endocrinology w/Lab BIO 432 Histology w/Lab BIO 434 Developmental Biology w/Lab BIO 436 Molecular Genetics w/Lab BIO 438 Plant Physiology w/Lab BIO 450 Biotechnology w/Lab BIO 458 Regenerative Medicine w/Lab	4

42			300's or 400's level **Population Biology and Ecology** elective from the following: BIO 320/360 Tropical Biology and Tropical Ecosystems BIO 319/320 Oceanic Island Ecology and Tropical Biology BIO 440 Aquatic Biology w/Lab BIO 442 Plant Ecology w/Lab BIO 444 Population/Community Ecology w/Lab BIO 446 Terrestrial Ecology w/Lab BIO 452 Conservation Biology w/Lab BIO 454 Biological Invasions w/Lab BIO 456 Marine Ecology w/Lab	4
43			300's or 400's level **Organismal Biology** elective from the following: BIO 324 Entomology w/Lab (see line 32) BIO 332 Biology of Plants w/Lab BIO 334 General Microbiology w/Lab BIO 336 Invertebrate Biology w/Lab BIO 338 Vertebrate Biology w/Lab BIO 340 Parasitology w/Lab 4 BIO 346 Animal Behavior w/Lab BIO 348 Functional Human Anatomy w/Lab BIO 350 Human Physiology w/Lab BIO 448 Physiological Ecology w/Lab	4
44			300's or 400's level Biology Elective (see line 32)	8
45	**Program Course Credits:**			**44**
46	**Open Electives**			
47			CHE 216 Organic Chemistry I with Lab	0-4
48			PHY 205 General Physics II With Lab OR	4

			CHE 217 Organic Chemistry II with Lab Neither is required in the program	
49			From line 32	0-8
50	**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 the ECSU**			
51	**Open Elective credits:**			**5-18**
52	**Total Credits at the Community College**	**60-61**	**Total Credits for the 4-Year Degree**	**120**

Transfer Pathway and Degree Program

Eastern Connecticut State University

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

Biology B.S.

Both BIO 120 and BIO 130 must be successfully completed with a grade of C- or better prior to starting BIO 220 or BIO 230. Both BIO 220 and BIO 230 must be successfully completed with a grade of C- or better before starting on the required upper-level courses.

1	Community Colleges:			ECSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education Requirements**				
5	**Competency:**				
6	**Section A**				
7	Written I	ENG*101 English Composition	3	T1: College Writing	3
8	Written II	Gen Education Elective	3	T1: Lit &Thought	3
9	Scientific Reasoning	BIO*121 General Biology I	4	T1: Natural Sciences – BIO 120 Organismal Biology w/Lab	4
10	Scientific Knowledge	CHE*121 General Chemistry I	4	T2: Natural Sciences – CHE 210/212 General Chemistry I w/Lab	4
11	Quantitative	MAT* 185 Trigonometry (NVCC) MAT*186 Precalculus	4	T1: Math – MAT 130 Precalculus	4
12	Historical Knowledge	Gen Ed Elective	3	T1: Historical Perspectives	3
13	Social Phenomena	Gen Ed Elective	3	T1SS: Social Sciences	3
14	Aesthetic Dimensions	Gen Ed Elective	3	T1A: Arts in Context	3
15	**Section B**				
16	Competency:	Gen Ed Elective	3	FYI 100	3
17	Competency:	Gen Ed Elective	3	Health and Wellness	3
18	**Framework30 Credits (30-31):**				**33**
19	**Pathway30**				
20	**Additional General Education Courses**				
21	Select one 1. Additional General Education I: Creativity 2. Additional General Education II: Global Knowledge 3. MAT 254 Calculus I		3-4	Will be received as 1. T2 Creative Expressions (line 24) 2. T2 Individuals and Society (line 23) 3. MAT 243 fulfilling T2 Applied Information Technologies requirements (line 25)	
22				T2 Cultural Perspectives	3

23			T2 Individuals and Societies	3
24			T2 Creative Expressions	3
25			T2 Applied Information Technologies (Fulfilled by either ECSU's MAT 216 Statistical Data Analysis OR MAT 254 at a community college within the Transfer Ticket degree)	3
26			Tier 3 Capstone – BIO 466 Senior Seminar	3
27			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
28	**General Education Credits:**	**36-37**		**54-55**
29	**Major Program Courses**			
30	BIO*122 General Biology II	4	BIO 130 Ecology with Lab	4
31	CHE* 122 General Chemistry II	4	CHEM 211 General Chemistry II (3) and CHEM 213 General Chemistry II Lab(1)	4
32	PHY* 121 General Physics I / PHY 221 Calculus Based Physics I or CHE*211 Organic Chemistry I	4	PHY 204 General Physics I with Lab Or CHE 216 Organic Chemistry I with Lab	4
33	Select two courses 1. BIO 208 (HCC) Forensic Science with Lab 2. BIO 211 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology I 3. BIO 212 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology II 4. BIO 220 (ACC, MCC (Cross listed with CHE 220 at MCC)) Biochemistry 5. BIO 222 (MXCC) Molecular Biotechniques 6. BIO 225 (NVCC) Intro to Biotechnology 7. BIO 227 (NVCC) Biotechnology II 8. BIO 235 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Microbiology 9. BIO 262 (GCC, MCC, NVCC, TRCC) Genetics and Lab	8	Will be received as 1. BIO 2xx, line 52 2. HSC 318, line 52 3. HSC 319, line 52 4. BIO 424, line 52 5. BIO 450, line 48 6. BIO 2xx, line 52 7. BIO 450, line 52 8. BIO 334, line 34 9. BIO 2xx, line 52 10. BIO 304 + 314, line 48	

	10. BIO 263 (MXCC, NCCC)Molecular Genetics 11. BIO 264 (QVCC) Molecular and Cellular Biology 12. BIO 270 (MXCC, NCCC, QVCC, TRCC) Ecology 13. BIO 272 (NCC) Marine Ecology 14. BIO 275 (QVCC) Entomology		11. BIO 2xx, line 52 12. BIO 308, line 48 13. BIO 2xx, line 52 14. BIO 324, line 48	
34			BIO 334 General Microbiology (line 33)	4
35				
36			CHE 216 Organic Chemistry I w/Lab	4
37			PHY 204 General Physics I with Lab	4
38				
39			BIO 220 Cell Biology	4
40			BIO 230 Genetics	4
41				
42			One of the following: MAT 244 Calculus II w/Technology MAT 216 Statistical Data Analysis – counts as T2 Applied Information Technologies – see line 25 BIO 378 Biology Research and Data Analysis	0, 3 or 4
43				
44				
45			300's or 400's level **Cell and Molecular Biology** elective from the following (if BIO*235 was not taken at CC) or any 300's or 400's level Biology Elective: BIO 330 Cell Biology w/Lab BIO 420 Microscopy w/Lab BIO 422 Research Methods Molecular Bio w/Lab BIO 424 Biological Chemistry w/Lab BIO 426 Biology of Cancer BIO 428 Virology w/Lab BIO 430 Endocrinology w/Lab BIO 432 Histology w/Lab BIO 434 Developmental Biology	4

			w/Lab BIO 436 Molecular Genetics w/Lab BIO 438 Plant Physiology w/Lab BIO 450 Biotechnology w/Lab BIO 458 Regenerative Medicine	
46			300's or 400's level **Population Biology and Ecology** elective from the following: BIO 320/360 Tropical Biology and Tropical Ecosystems BIO 319/320 Oceanic Island Ecology and Tropical Biology BIO 440 Aquatic Biology w/Lab BIO 442 Plant Ecology w/Lab BIO 444 Population/Community Ecology w/Lab BIO 446 Terrestrial Ecology w/Lab BIO 452 Conservation Biology w/Lab BIO 454 Biological Invasions w/Lab BIO 456 Marine Ecology w/Lab	4
47			300's or 400's level **Organismal Biology** elective from the following: BIO 324 Entomology w/Lab BIO 332 Biology of Plants w/Lab BIO 334 General Microbiology w/Lab (see line 33) BIO 336 Invertebrate Biology w/Lab BIO 338 Vertebrate Biology w/Lab BIO 340 Parasitology w/Lab 4 BIO 344 General Mycology w/Lab BIO 346 Animal Behavior w/Lab BIO 348 Functional Human Anatomy w/Lab BIO 350 Human Physiology w/Lab BIO 448 Physiological Ecology w/Lab	4
48			300's or 400's level Biology Elective	8

49	**Program Course Credits:**			**52-56**
50	**Open Electives**			
51	PHY* 122 General Physics II / PHY 222 Calculus Based Physics II or CHE*212 Organic Chemistry II	4	PHY 205 General Physics II with Lab Or CHE 217 Organic Chemistry II with Lab	4
52			From line 33	0-8
53	**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 the ECSU.**			
54	**Open Elective credits:**	**4**		**0-10**
55	**Total Credits at the Community College**	**60-61**	**Total Credits for the 4-Year Degree**	**120-122**

Transfer Pathway and Degree Program
Southern Connecticut State University
Biology B.A.

1	Community Colleges:			SCSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education Requirements**				
5	**Competency:**				
6	**Section A**				
7	Written I	English 101	3	FYE	3
8	Written II	Gen Ed	3	Written Communication	3
9	Scientific Reasoning	BIO*121 General Biology I	4	BIO 102 Zoology	4
10	Scientific Knowledge	CHE*121 General Chemistry I	4	Natural World I – Physical Realm – CHE 120 General Chemistry I	4
11	Quantitative	MAT* 185 Trigonometry (NVCC) MAT*186 Precalculus	4	Quantitative Reasoning – MAT 122 Precalculus	4
12	Historical Knowledge	Gen Ed*	3	Time and Place	3
13	Social Phenomena	Gen Ed	3	Social structure, Conflict, Consensus	3
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 Credits**		**33**		**33**
19	**Pathway30**				
20	**Additional General Education Courses**				
21	Select one 1. Additional General Education I: Creativity 2. Additional General Education II: Global Knowledge 3. MAT 254 Calculus I		3-4	Will be received as 1. Creative Drive (line 22) 2. Global Awareness (line 25) 3. MAT 150 Calculus I (line 47)	
22				Complete 3 of the 4 remaining areas (lines 23-25)	9
23				American Experience	
24				Creative Drive	
25				Global Awareness	
26				Mind and Body	
27				**Must be taken at SCSU:**	
28				Tier 3 Connections Capstone	3

29	**General Education Credits:**			**45**
30	**Major Program Courses**			
31	BIO*122 General Biology II	4	Natural World II: BIO 103 – Botany	4
32				
33			BIO 220 Genetics (see line 34, items 9 and 10)	4
34	Select two courses 1. BIO 208 (HCC) Forensic Science with Lab 2. BIO 211 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology I 3. BIO 212 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology II 4. BIO 220 (ACC, MCC (Cross listed with CHE 220 at MCC) Biochemistry 5. BIO 222 (MXCC) Molecular Biotechniques 6. BIO 225 (NVCC) Intro to Biotechnology 7. BIO 227 (NVCC) Biotechnology II 8. BIO 235 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Microbiology 9. BIO 262 (GCC, MCC, NVCC, TRCC) Genetics and Lab 10. BIO 263 (MXCC, NCCC)Molecular Genetics 11. BIO 264 (QVCC) Molecular and Cellular Biology 12. BIO 270 (MXCC, NCCC, QVCC, TRCC) Ecology 13. BIO 272 (NCC) Marine Ecology 14. BIO 275 (QVCC) Entomology	8	Will be received as 1. BIO 205, line 37 2. BIO 200, line 48 3. BIO 201, line 48 4. BIO 2xx, line 48 5. BIO 2xx, line 37 6. BIO 2xx, line 37 7. BIO 2xx, line 48 8. BIO 233, line 37 9. BIO 220, line 33 10. BIO 220, line 33 11. BIO 2xx, line 37 12. BIO 202, line 39 13. BIO 2xx, line 39 14. BIO 2xx, line 39	
35			<u>Select one Entry Level Anatomy/ Physiology</u> BIO 230 – Plant Anatomy and Morphology BIO 231 – Comparative Vertebrate Anatomy BIO 235 - Histology	4
36			<u>Select one Upper Level Anatomy/Physiology</u>	4

			BIO 301 – Physiology BIO 401 – Animal Physiology BIO 420 – Plant Physiology BIO 454 – Brain Anatomy and Transmission	
37			<u>Select one Entry Level Cell/Molecular Biology</u> BIO 205 – Forensic Biology BIO 233 – General Microbiology BIO 236 – Cell Biology BIO 240 – Human Heredity (3 cr) BIO 296 – Genomics I *This requirement may have been met at the community college. See line 34.*	(3-4)
38			<u>Select one Upper Level Cell/Molecular Biology</u> BIO 335 – Pathogenic Microbiology BIO 360- Plant Growth and Development BIO 435 – Developmental Biology BIO 436 – Molecular Biology BIO 451 – Tissue Culture BIO 466 – Advanced Molecular and Cell Biology BIO 467 – Laboratory Course in Biotechnology	4
39		4	<u>Select one Entry Level Biodiversity/ Ecology/ Organismal</u> BIO 202 – Ecology or BIO 210 – Environmental Biology and Conservation (3 cr) or BIO 228- Vertebrate Zoology or BIO229 – Invertebrate Zoology or BIO 250 – Plant Taxonomy and Systematics *This requirement may have been met at the community college. See line 34.*	3-4
40			<u>Select one Upper Level Biodiversity/ Ecology/ Organismal</u> BIO 334 – Microbial Ecology or BIO 337 – Medically Important Arthropods (3 cr) or BIO 427 – Entomology or BIO 429 – Limnology or BIO 430 – Marine Ecology or BIO 432 – Mycology or	3-4

			BIO 438 – Aquatic Entomology or BIO 440 – Parasitic Infections (3 cr) or BIO 460 – Paleontology	
41			One other upper level BIO course from upper level lists above OR BIO 497 – In-service Training in Biology BIO 495 – Senior Thesis BIO 499 – Independent Study and Research	3-4
42	CHE* 122 General Chemistry II	4	CHE 122 General Chemistry II	4
43	**Program Course Credits:**			**38-44**
44	**Unrestricted Electives**			
45	PHY* 121 General Physics I / PHY 221 Calculus Based Physics I or CHE*211 Organic Chemistry I	4	PHY 200 General Physics I Or CHE 260 Organic Chemistry I	4
46	PHY* 122 General Physics II / PHY 222 Calculus Based Physics II or CHE*212 Organic Chemistry II	4	PHY 201 General Physics II Or CHE 261 Organic Chemistry II	4
47			MAT 150 Calculus I	0-4
48			Non-program electives	0-8
49				
50				
51				
52	**Open Elective credits:**	**0**		**22-32**
53	**Total Credits at the Community College**	**60-61**	**Total Credits for the 4-Year Degree**	**120**

Transfer Pathway and Degree Program
Southern Connecticut State University
Biology B.S.

1	Community Colleges:			SCSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education Requirements**				
5	**Competency:**				
6	**Section A**				
7	Written I	English 101	3	FYE	3
8	Written II	Gen Ed	3	Written Communication	3
9	Scientific Reasoning	BIO*121 General Biology I	4	Biology 102 Zoology	4
10	Scientific Knowledge	CHE*121 General Chemistry I	4	Natural World I – Physical Realm – CHE 120 General Chemistry I	4
11	Quantitative	MAT* 185 Trigonometry (NVCC) MAT*186 Precalculus	4	Quantitative Reasoning – MAT 122 Precalculus	4
12	Historical Knowledge	Gen Ed*	3	Time and Place	3
13	Social Phenomena	Gen Ed	3	Social structure, Conflict, Consensus	3
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 Credits: 33**				**33**
19	**Pathway30**				
20	**Additional General Education Courses**				
21	Select one 1. Additional General Education I: Creativity 2. Additional General Education II: Global Knowledge 3. MAT 254 Calculus I		3-4	Will be received as 1. Creative Drive (line 24) 2. Global Awareness (line 25) 3. MAT 150 Calculus I (line 56)	
22				Complete 3 of the 4 remaining areas (lines 23-25)	9
23				American Experience	
24				Creative Drive	
25				Global Awareness	
26				Mind and Body	
27				**Must be taken at SCSU:**	

28			Tier 3 Connections Capstone	3
29	**General Education Credits:**	**36**		**45**
30	**Major Program Courses**			
31	BIO*122 General Biology II	4	Natural World II: Life and Environment: BIO 103 - Botany	4
32	CHE* 122 General Chemistry II	4	CHE 121 General Chemistry II	4
33	PHY* 121 General Physics I / PHY 221 Calculus Based Physics I OR CHE*211 Organic Chemistry I	4	PHY 200 General Physics I (line 36) OR CHE 260 Organic Chemistry I (line 38)	
34	PHY* 122 General Physics II / PHY 222 Calculus Based Physics II OR CHE*212 Organic Chemistry II	4	PHY 201 General Physics II (line 37) OR CHE 261 Organic Chemistry II (line 54)	4
35	Select two courses 1. BIO 208 (HCC) Forensic Science with Lab 2. BIO 211 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology I 3. BIO 212 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology II 4. BIO 220 (ACC, MCC (Cross listed with CHE 220 at MCC)) Biochemistry 5. BIO 222 (MXCC) Molecular Biotechniques 6. BIO 225 (NVCC) Intro to Biotechnology 7. BIO 227 (NVCC) Biotechnology II 8. BIO 235 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Microbiology 9. BIO 262 (GCC, MCC, NVCC, TRCC) Genetics and Lab 10. BIO 263 (MXCC, NCCC)Molecular Genetics 11. BIO 264 (QVCC) Molecular and Cellular Biology 12. BIO 270 (MXCC, NCCC, QVCC, TRCC) Ecology 13. BIO 272 (NCC) Marine Ecology 14. BIO 275 (QVCC) Entomology	8	Will be received as 1. BIO 205, line 43 2. BIO 200, line 56 3. BIO 201, line 56 4. BIO 2xx, line 56 5. BIO 2xx, line 43 6. BIO 2xx, line 43 7. BIO 2xx, line 56 8. BIO 233, line 43 9. BIO 220, line 40 10. BIO 2xx, line 40 11. BIO 2xx, line 43 12. BIO 202, line 45 13. BIO 2xx, line 45 14. BIO 2xx, line 45	
35			PHY 200 General Physics I	4

36			PHY 201 General Physics II	4
37			CHEM 260 Organic Chemistry	4
38				
39			BIO 103 – Botany	4
40			BIO 220 Genetics (see line 35, items 9 & 10)	4
41			<u>Select one Entry Level Anatomy/Physiology</u> BIO 230 – Plant Anatomy and Morphology or BIO 231 – Comparative Vertebrate Anatomy or BIO 235 - Histology	4
42			<u>Select one Upper Level Anatomy/Physiology</u> BIO 301 – Physiology or BIO 401 – Animal Physiology or BIO 420 – Plant Physiology or BIO 454 – Brain Anatomy and Transmission	4
43			<u>Select one Entry Level Cell/Molecular Biology</u> BIO 205 – Forensic Biology or BIO 233 – General Microbiology BIO 236 – Cell Biology BIO 240 – Human Heredity (3 cr) BIO 296 – Genomics I *This requirement may have been met at the community college. See line 35.*	3-4
44			<u>Select one Upper Level Cell/Molecular Biology</u> BIO 335 – Pathogenic Microbiology or BIO 360- Plant Growth and Development or BIO 435 – Developmental Biology or BIO 436 – Molecular Biology or BIO 451 – Tissue Culture or BIO 466 – Advanced Molecular and Cell Biology or BIO 467 – Laboratory Course in Biotechnology	4
45			<u>Select one Entry Level Biodiversity/Ecology/ Organismal</u> BIO 202 – Ecology or	3-4

			BIO 210 – Environmental Biology and Conservation (3 cr) or BIO 228- Vertebrate Zoology or BIO229 – Invertebrate Zoology or BIO 250 – Plant Taxonomy and Systematics *This requirement may have been met at the community college. See line 35.*	
46			<u>Select one Upper Level Biodiversity/ Ecology/ Organismal</u> BIO 334 – Microbial Ecology or BIO 337 – Medically Important Arthropods (3 cr) or BIO 427 – Entomology or BIO 429 – Limnology or BIO 430 – Marine Ecology or BIO 432 – Mycology or BIO 438 – Aquatic Entomology or BIO 440 – Parasitic Infections (3 cr) or BIO 460 – Paleontology	3-4
47			One other upper level BIO course from upper level lists above OR BIO 497 – In-service Training in Biology BIO 495 – Senior Thesis BIO 499 – Independent Study and Research	3-4
48			MAT 221 – Intermediate Applied Statistics	4
49				
50	**Program Course Credits:**	**(16)-24**		**57-64**
51	**Open Electives**			
52				
53			MAT 150 Calculus I	0-4
54			CHE 261 Organic Chemistry II	0-4
56			Non-program electives	0-8
55				
56	**Open Elective credits:**	**0**		**0-18**
57	**Total Credits at the Community College**	**60-61**	**Total Credits for the 4-Year Degree**	**120**

Transfer Pathway and Degree Program
Western Connecticut State University
Biology – Professional Option B.A.

1	Community Colleges			WCSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education Requirements**				
5	**Competency:**				
6	**Section A**				
7	Written I	ENG*101 English Composition	3	Writing I	3
8	Written II	Gen Ed Elective	3	Writing II	3
9	Scientific Reasoning	BIO*121 General Biology I	4	Scientific Inquiry: BIO 103 General Biology I	4
10	Scientific Knowledge	CHE*121 General Chemistry I	4	General Education Elective / Second Exposure to Scientific Inquiry: CHE 110 General Chemistry I	4
11	Quantitative	MAT* 185 Trigonometry (NVCC) MAT*186 Precalculus	4	Quantitative Reasoning: MAT 133 Precalculus	4
12	Historical Knowledge	Gen Ed Elective	3	Critical Thinking	3
13	Social Phenomena	Gen Ed Elective	3	Information Literacy	3
14	Aesthetic Dimensions	Gen Ed Elective	3	Creative Process	
15	**Section B**				
16	Competency:	Gen Ed Elective	3	Oral Communication	3
17	Competency:	Gen Ed Elective		General Education Elective / Exploration	3
18	**Framework30 Credits (30-31):**				**33**
19	**Pathway30**				
20	**Additional General Education Courses**				
21	*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, including at least one repeat (Scientific Inquiry), and 30 of the 40 credits of Explorations.*				
22	Select one		3-4	Will be received as	3-4

	1. Additional General Education I: Creativity 2. Additional General Education II: Global Knowledge 3. MAT 254 Calculus I		1. General Education Elective / Second Exposure to Creative Process; if outside the major, will also count toward the Explorations requirement 2. Intercultural Competence; if outside the major, will also count toward the Explorations requirement 3. MAT 181 Calculus I (line 43)	
23			General Education Elective / Second Exposure – must complete 3 in total.	3
24			Intercultural Competence	3
25			Health and Wellness	3
26			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
27			**Must be taken at WCSU:**	
28			Written Communication III— embedded in a major course	0
29			Culminating Gen Ed Experience – may be satisfied by a major capstone	0
30	**General Education Credits:**	**40-41**		**49-50**
31	**Major Program Courses**			
32	BIO*122 General Biology II	4	BIO 104 General Biology II	4
33	CHE*122 General Chemistry II	4	CHE 111 General Chemistry II	4
34			BIO 205 Animal Physiology	4
34			BIO 200 Ecology	4
35	Select two courses 1. BIO 208 (HCC) Forensic Science with Lab 2. BIO 211 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology I 3. BIO 212 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology II 4. BIO 220 (ACC, MCC (Cross listed with CHE 220 at MCC) Biochemistry 5. BIO 222 (MXCC) Molecular Biotechniques	8	Will be received as 1. BIO 205, line 43 2. BIO 110, line 43 3. BIO 111, line 43 4. BIO 2xx, line 43 5. BIO 2xx, line 43	

	6. BIO 225 (NVCC) Intro to Biotechnology 7. BIO 227 (NVCC) Biotechnology II 8. BIO 235 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Microbiology 9. BIO 262 (GCC, MCC, NVCC, TRCC) Genetics and Lab 10. BIO 263 (MXCC, NCCC)Molecular Genetics 11. BIO 264 (QVCC) Molecular and Cellular Biology 12. BIO 270 (MXCC, NCCC, QVCC, TRCC) Ecology 13. BIO 272 (NCC) Marine Ecology BIO 275 (QVCC) Entomology		6. BIO 2xx, line 43 7. BIO 2xx, line 43 8. BIO 215, line 43 9. BIO 220, line 43 10. BIO 2xx, line 43 11. BIO 2xx, line 43 12. BIO 200, line 34 13. BIO 2xx, line 43 BIO 2xx, line 43	
36			BIO 300 Cell Biology	4
37			BIO 312 Genetics	4
38			BIO 325 Evolutionary Biology	3
39			BIO 360 Scientific Communication	2
40			BIO 480 Group Senior Research *or* BIO 490 Senior Research	3
41	PHY* 121 General Physics I / PHY 221 Calculus Based Physics I OR CHE*211 Organic Chemistry I	4	PHY 110 General Physics I with Calculus (line 43) OR CHE 210 Organic I	-- 4
42	PHY* 122 General Physics II / PHY 222 Calculus Based Physics II OR CHE*212 Organic Chemistry II	4	PHY 111 General Physics II with calculus (line 43) OR CHE 211 Organic II	-- 4
43			Science/Math Approved Electives, chosen with department approval.	14
44				
45	**Program Course Credits:**	**20**		**62**
46	**Open Electives**			
47	**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.**			
48	**Open Elective credits:**			**8-9**

49	**Total Credits at the Community College**	**60-61**	**Total Credits for the 4-Year Degree**	**120**

Transfer Pathway and Degree Program
Western Connecticut State University
Biology – Ecological Option, B.A.

1	Community Colleges:			WCSU	
2			Credits		Credits
3	**Framework30**				
4	**General Education Requirements**				
5	**Competency:**				
6	**Section A**				
7	Written I	ENG*101 English Composition	3	Writing I	3
8	Written II	Gen Ed Elective	3	Writing II	3
9	Scientific Reasoning	BIO*121 General Biology I	4	Scientific Inquiry: BIO 103 General Biology I	4
10	Scientific Knowledge	CHE*121 General Chemistry I	4	General Education Elective / Second Exposure to Scientific Inquiry: CHE 110 General Chemistry I	4
11	Quantitative	MAT* 185 Trigonometry (NVCC) MAT*186 Precalculus	4	Quantitative Reasoning: MAT 133 Precalculus	4
12	Historical Knowledge	Gen Ed Elective	3	Critical Thinking	3
13	Social Phenomena	Gen Ed Elective	3	Information Literacy	3
14	Aesthetic Dimensions	Gen Ed Elective	3	Creative Process	
15	**Section B**				
16	Competency:	Gen Ed Elective	3	Oral Communication	3
17	Competency:	Gen Ed Elective	3	General Education Elective / Exploration	3
18	**Framework30 Credits (30-31):**				**33**
19	**Pathway30**				
20	**Additional General Education Courses**				
21	*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, including at least one repeat (Scientific Inquiry), and 30 of the 40 credits of Explorations.			
22	Select one 1. Additional General Education I: Creativity 2. Additional General Education II: Global Knowledge 3. MAT 254 Calculus I	3-4	Will be received as 1. General Education Elective / Second Exposure to Creative Process; if outside the major, will also count toward the Explorations requirement 2. Intercultural Competence; if outside the major, will also count toward the Explorations requirement 3. MAT 181 Calculus I (line 43)	
23			General Education Elective / Second Exposure – must complete 3 in total.	3
24			Intercultural Competence	3
25			Health and Wellness	3
26			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
27			**Must be taken at WCSU:**	
29			Written Communication III— embedded in a major course	0
30			Culminating Gen Ed Experience – may be satisfied by a major capstone	0
31	**General Education Credits:**	**40-41**		**49**
32	**Major Program Courses**			
33	BIO*122 General Biology II	4	BIO 104 General Biology II	4
34	CHE* 122 General Chemistry II	4	CHE 111 General Chemistry I	4
35			BIO 205 Animal Physiology	4
36	Select two courses 1. BIO 208 (HCC) Forensic Science with Lab 2. BIO 211 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology I 3. BIO 212 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Anatomy & Physiology II	8	Will be received as 1. BIO 205, line 43 2. BIO 110, line 43 3. BIO 111, line 43	

	4. BIO 220 (ACC, MCC (Cross listed with CHE 220 at MCC) Biochemistry 5. BIO 222 (MXCC) Molecular Biotechniques 6. BIO 225 (NVCC) Intro to Biotechnology 7. BIO 227 (NVCC) Biotechnology II 8. BIO 235 (ACC, CCC, GCC, HCC, MCC, MXCC, NVCC, NCCC, NCC, QVCC, TRCC, TXCC) Microbiology 9. BIO 262 (GCC, MCC, NVCC, TRCC) Genetics and Lab 10. BIO 263 (MXCC, NCCC)Molecular Genetics 11. BIO 264 (QVCC) Molecular and Cellular Biology 12. BIO 270 (MXCC, NCCC, QVCC, TRCC) Ecology 13. BIO 272 (NCC) Marine Ecology 14. BIO 275 (QVCC) Entomology		4. BIO 2xx, line 43 5. BIO 2xx, line 43 6. BIO 2xx, line 43 7. BIO 2xx, line 43 8. BIO 215, line 43 9. BIO 220, line 43 10. BIO 2xx, line 43 11. BIO 2xx, line 43 12. BIO 200, line 34 13. BIO 2xx, line 43 14. BIO 2xx, line 43	
37			BIO 216 Microbiology	4
38			BIO 200 Ecology	4
37			11-12 credits of Biology Major Electives, 200-level or above.	11-12
39			BIO 312 Genetics	4
40			BIO 325 Evolutionary Biology	3
41			BIO 360 Scientific Communication	2
42			BIO 320 Conservation Ecology or BIO 450 Population Ecology or BIO 475 Climate Ecology	3-4
43			BIO 480 Group Senior Research *or* BIO 490 Senior Research	3
44	PHY* 121 General Physics I / PHY 221 Calculus Based Physics I or CHE*211 Organic Chemistry I PHY* 122 General Physics II / PHY 222 Calculus Based Physics II or CHE*212 Organic Chemistry II	8	Physical Science / Math Electives	12
45			MAT 115 Biostatistics OR MAT 120 Elementary Statistics	3
46	**Program Course Credits:**	**20**		**57-59**
47	**Open Electives**			

48	**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.**			
49	**Open Elective credits:**	**0**		**11-14**
50	**Total Credits at the Community College**	**60-61**	**Total Credits for the 4-Year Degree**	**120**

Credits Remaining in the four-year degree
General Biology B.S.

All biology courses must be completed with a C- or above.

1	**Central Connecticut State University**	
2	**Remaining General Education Courses**	
3	**Course**	**Credits**
4	*One of the requirements in lines 5, 6, and 7 will have been met at the community college.*	
5	Study Area I – Arts and Humanities – If not met at the community college	0-3
6	Study Area II – Social Sciences – If not met at the community college	0-3
7	Skill Area II – Math/Stat/ Comp Sci – MATH 152 Calculus I – If not met at the community college	0-4
8	Study Area III – Behavioral Sciences	3
9	Study Area I – Literature	3
10	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
11	**General Education Credits**	**18-19**
12	**Remaining Major Program Requirements**	
13	**Course**	**Credits**
14	PHY 121 General Physics I or Fdns of Organic Chemistry/Lab (CHEM 210/211); whichever was not taken at CC	4
15	PHY 122 General Physics II (if not taken at CC)	(4)
16	BIO 200 Integrative Biology (If BIO 225 Introduction to Biotechnology (NVCC) or BIO 270 Ecology (MXCC, NCCC, QVCC, TRCC) was not taken at the community college.)	(4)
17	BIO 290 Biology Research Experience I	2
18	8-13 credits of BIO electives to add up to 32 total credits in BIO/BMS courses (except for BIO 211)	8-13
19	BIO 390 Biology Research Experience II or 391 Internship in Biology	1-6
20	**Program Course Credits**	**20-28**
21	**Minor** – A minor is not required for this major.	
22	**Remaining Open Electives**	
23	**Courses**	**Credits**
24	**Open Elective credits**	**13-22**
25	**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.**	

26	**Total Credits Remaining for the 4-Year Degree**	**60**

Credits Remaining in the four-year degree
Biology – Ecology, Biodiversity, and Evolutionary Biology B.S.

All biology courses must be completed with a C- or above.

1	**Central Connecticut State University**	
2	**Remaining General Education Courses**	
3	**Course**	**Credits**
4	*One of the requirements in lines 5, 6, and 7 will have been met at the community college.*	
5	Study Area I – Arts and Humanities – If not met at the community college	0-3
6	Study Area II – Social Sciences – If not met at the community college	0-3
7	Skill Area II – Math/Stat/ Comp Sci – MATH 152 Calculus I – If not met at the community college	0-4
8	Study Area III – Behavioral Sciences	3
9	Study Area I – Literature	3
10	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
11	**General Education Credits**	**18-19**
12	**Remaining Major Program Requirements**	
13	**Course**	**Credits**
14	PHY 121 General Physics I or CHEM 210/211 Fdns of Organic Chemistry/Lab (whichever was not taken at CC)	4
15	PHY 122 General Physics II (if not taken at CCC)	(4)
16	BIO 200 Integrative Biology (If BIO 225 Introduction to Biotechnology (NVCC) or BIO 270 Ecology (MXCC, NCCC, QVCC, TRCC) was not taken at the community college.)	(4)
17	BIO 290 Biology Research Experience I	2
18	Biodiversity Elective – Choose from: BIO 315 Microbial Ecology BIO 322 Vertebrate Zoology BIO 326 Mushrooms, Mosses, & More BIO 327 Vascular Plants BIO 420 Ornithology BIO 421 Marine Invertebrate Biology BIO 425 Biology of Marine and Freshwater Algae BIO 444 Plant Taxonomy BIO 468	3-4
19	Ecology/Evolution Elective – Choose from: BIO 402 Population Genetics BIO 405 Ecology BIO 434 Ecology of Inland Waters BIO 440 Evolution	3-4

	BIO 480 Animal Behavior	
20	EBE Specialization Electives – Choose from the following to add up to a total of 32 credits in BIO courses, not including community college BIO courses that do not transfer as a designated major requirement: BIO 230 Natural History BIO 402 Population Genetics BIO 315 Microbial Ecology BIO 322 Vertebrate Zoology BIO 326 Mushrooms, Mosses & More BIO 327 Vascular Plants BIO 405 Ecology BIO 410 Ecological Physiology BIO 420 Ornithology BIO 421 Marine Invertebrate Biology BIO 425 Biology of Marine & Freshwater Algae BIO 434 Ecology of Inland Waters BIO 438 Aquatic Pollution BIO 440 Evolution BIO 444 Plant Taxonomy BIO 470 Field Studies in Biology BIO 480 Animal Behavior BIO 489 Vertebrate Dissection *BIO 490 Topics in Biology *BIO 491 Advanced Problems in Biology *BIO 499 Undergraduate Thesis in Biology *To be considered in the E/B/E group, these courses must have a topic approved by the E/B/E faculty advisor.	6-11
21	BIO 390 Biology Research Experience II or 391 Internship in Biology	1-6
22		
23	**Program Course Credits**	**19-24**
24	**Minor** – A minor is not required for this major.	
25	**Remaining Open Electives**	
26	**Courses**	**Credits**
27	**Open Elective credits**	**17-23**
28	**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.**	
29	**Total Credits Remaining for the 4-Year Degree**	**60**

Credits Remaining in the four-year degree
Biology – Environmental Science B.S.

All biology courses must be completed with a C- or above.

1	**Central Connecticut State University**	
2	**Remaining General Education Courses**	
3	**Course**	**Credits**
4	*One of the requirements in lines 5, 6, and 7 will have been met at the community college.*	
5	Study Area I – Arts and Humanities – If not met at the community college	0-3
6	Study Area II – Social Sciences – If not met at the community college	0-3
7	Skill Area II – Math/Stat/ Comp Sci – MATH 152 Calculus I – If not met at the community college	0-4
8	Study Area III – Behavioral Sciences	3
9	Study Area I – Literature	3
10	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
11	**General Education Credits**	**18-19**
12	**Remaining Major Program Requirements**	
13	**Course**	**Credits**
14	Students will have completed one of the following sequences at the community college, fulfilling either lines 15/16 or 17/18.	7-8
15	PHY 121 General Physics I if PHY 121 General Physics I was not taken at the community college	(4)
16	PHY 122 General Physics II if PHY 122 General Physics II was not taken at the community college	(4)
17	CHEM 210 Foundations of Organic Chemistry and CHEM 211 Foundations of Organic Chemistry Laboratory if CHE 211 Organic Chemistry I was not taken at the community college	(4)
18	IF CHE 212 Organic Chemistry is not taken at the community college: CHEM 212 Organic Synthesis and CHEM 213 Organic Synthesis Laboratory OR CHEM 456 Toxicology	(3-4)
19	BIO 200 Integrative Biology (If BIO 225 Introduction to Biotechnology (NVCC) or BIO 270 Ecology (MXCC, NCCC, QVCC, TRCC) was not taken at the community college.)	(4)
20	BIO 290 Biology Research Experience I	2
21	BIO 390 Biology Research Experience II or 391 Internship in Biology	1-6
22	BIO 436 Environmental Resources and Management (3) OR BIO 438 Aquatic Pollution (4)	3-4
23	Choose one: BIO 315 Microbial Ecology	3-4

	BIO 322 Vertebrate Zoology BIO 326 Mushrooms, Mosses, & More BIO 327 Vascular Plants BIO 420 Ornithology BIO 421 Marine Invertebrate Biology BIO 425 Biology of Marine and Freshwater Algae BIO 444 Plant Taxonomy	
24	Choose one: BIO 331 Neurobiology BIO 410 Ecological Physiology BIO 412 Human Physiology (BIO 413 Human Physiology Laboratory is optional) BIO 449 Plant Physiology	3-4
25	Choose one: BIO 405 Ecology BIO 434 Ecology of Inland Waters	4
26	CHEM 406 Environmental Chemistry	3
27	Choose one: ESCI 121 Physical Geology ESCI 450 Environmental Geology	3-4
28		
29	**Program Course Credits**	**29-43**
30	**Minor** – A minor is not required for this major.	
31	**Remaining Open Electives**	
32	**Courses**	**Credits**
33	**Open Elective credits**	**0-13**
34	**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.**	
35	**Total Credits Remaining for the 4-Year Degree**	**60-62**

Credits Remaining in the four-year degree
Biology B.A.

Both BIO 220 and BIO 230 must be successfully completed with a grade of C- or better before starting on the required upper-level courses.

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. One of the T2 requirements may have been completed at the community college.*	
5	T2 Cultural Perspectives	3
6	T2 Individuals and Societies	3
7	T2 Creative Expressions	3
8	T2 Applied Information Technologies – must be MAT 216 Statistical Data Analysis if Calculus I was not taken at the community college	3
9	T3 Capstone – BIO 466 Senior Seminar	3
10	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
11	**General Education Credits**	**18-21**
12	**Remaining Major Program Requirements**	
13	**Course**	**Credits**
14	PHY 204 General Physics I with Lab (if PHY was not taken at CC)	(4)
15	BIO 220 Cell Biology	4
16	BIO 230 Genetics	4
17	EES 104 Dynamic Earth	4
18	300's or 400's level **Cell and Molecular Biology** elective from the following (if BIO*235 was not taken at CC) or any 300's or 400's level Biology Elective: BIO 330 Cell Biology w/Lab BIO 420 Microscopy w/Lab BIO 422 Research Methods Molecular Bio w/Lab BIO 424 Biological Chemistry w/Lab BIO 426 Biology of Cancer BIO 428 Virology w/Lab BIO 430 Endocrinology w/Lab BIO 432 Histology w/Lab BIO 434 Developmental Biology w/Lab BIO 436 Molecular Genetics w/Lab BIO 438 Plant Physiology w/Lab BIO 450 Biotechnology w/Lab BIO 458 Regenerative Medicine w/Lab	4
19	300's or 400's level **Population Biology and Ecology** elective from the following: BIO 320/360 Tropical Biology and Tropical Ecosystems	4

	BIO 319/320 Oceanic Island Ecology and Tropical Biology BIO 440 Aquatic Biology w/Lab BIO 442 Plant Ecology w/Lab BIO 444 Population/Community Ecology w/Lab BIO 446 Terrestrial Ecology w/Lab BIO 452 Conservation Biology w/Lab BIO 454 Biological Invasions w/Lab BIO 456 Marine Ecology w/Lab	
20	300's or 400's level **Organismal Biology** elective from the following: BIO 324 Entomology w/Lab BIO 332 Biology of Plants w/Lab BIO 334 General Microbiology w/Lab BIO 336 Invertebrate Biology BIO 338 Vertebrate Biology w/Lab BIO 340 Parasitology w/Lab 4 BIO 346 Animal Behavior w/Lab BIO 348 Functional Human Anatomy w/Lab BIO 350 Human Physiology w/Lab BIO 448 Physiological Ecology w/Lab	4
21	300's or 400's level Biology Elective	8
22	**Program Course Credits**	**32-36**
23	**Remaining Open Electives**	
24	**Courses**	**Credits**
25	**Open Elective credits**	**3-10**
26	**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.**	
27	**Total Credits Remaining for the 4-Year Degree**	**60**

Credits Remaining in the four-year degree
Biology B.S.

Both BIO 220 and BIO 230 must be successfully completed with a grade of C- or better before starting on the required upper-level courses.

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. One of the T2 requirements may have been completed at the community college.*	
5	T2 Cultural Perspectives	3
6	T2 Individuals and Societies	3
7	T2 Creative Expressions	3
8	T2 Applied Information Technologies – MAT 216 Statistical Data Analysis if taken for line 20	3
9	T3 Capstone – BIO 466 Senior Seminar	3
10	Foreign Language Proficiency (Can be met with three years of the same foreign language in high school or the completion of a second semester at the college level. Credits will adjust accordingly.)	6
11	**General Education Credits**	**18-21**
12	**Remaining Major Program Requirements**	
13	**Course**	**Credits**
14	CHE 216 Organic Chemistry I w/Lab (if not taken at the CC)	(4)
15	PHY 204 General Physics I with Lab OR PHY 208 Physics I with Calculus w/Lab (if PHY was not taken at CC)	(4)
16	Lines 14 and 15 will add up to 4-8 credits.	4
17	BIO 220 Cell Biology	4
18	BIO 230 Genetics	4
19	MAT 243 Calculus I w/Technology (if not taken at the CC)	0-4
20	One of the following: MAT 244 Calculus II w/Technology MAT 216 Statistical Data Analysis – if chosen, counts as T2 Applied Information Technologies – see line 8 BIO 378 Biology Research and Data Analysis	0, 3 or 4
21		
22	300's or 400's level **Cell and Molecular Biology** elective from the following (if BIO*235 was not taken at CC) or any 300's or 400's level Biology Elective: BIO 330 Cell Biology w/Lab BIO 420 Microscopy w/Lab BIO 422 Research Methods Molecular Bio w/Lab BIO 424 Biological Chemistry w/Lab BIO 426 Biology of Cancer BIO 428 Virology w/Lab	4

	BIO 430 Endocrinology w/Lab BIO 432 Histology w/Lab BIO 434 Developmental Biology w/Lab BIO 436 Molecular Genetics w/Lab BIO 438 Plant Physiology w/Lab BIO 450 Biotechnology w/Lab BIO 458 Regenerative Medicine	
23	300's or 400's level **Population Biology and Ecology** elective from the following: BIO 320/360 Tropical Biology and Tropical Ecosystems BIO 319/320 Oceanic Island Ecology and Tropical Biology BIO 440 Aquatic Biology w/Lab BIO 442 Plant Ecology w/Lab BIO 444 Population/Community Ecology w/Lab BIO 446 Terrestrial Ecology w/Lab BIO 452 Conservation Biology w/Lab BIO 454 Biological Invasions w/Lab BIO 456 Marine Ecology w/Lab	4
24	300's or 400's level **Organismal Biology** elective from the following: BIO 324 Entomology w/Lab BIO 332 Biology of Plants w/Lab BIO 334 General Microbiology w/Lab BIO 336 Invertebrate Biology w/Lab BIO 338 Vertebrate Biology w/Lab BIO 340 Parasitology w/Lab BIO 344 General Mycology w/Lab BIO 346 Animal Behavior w/Lab BIO 348 Functional Human Anatomy w/Lab BIO 350 Human Physiology w/Lab BIO 448 Physiological Ecology w/Lab	4
25	300's or 400's level Biology Elective	8
26	**Program Course Credits**	**32-40**
27	**Remaining Open Electives**	
28	**Courses**	**Credits**
29	**Open Elective credits**	**0-10**
30	**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.**	
31	**Total Credits Remaining for the 4-Year Degree**	**60-61**

Credits Remaining in the four-year degree
Biology B.A.
Students must complete 2 "W" courses at SCSU.

1	**Southern Connecticut State University**	
2	**Remaining General Education Courses**	
3	**Course**	**Credits**
4	*One additional general education requirement may be fulfilled at the community college. Students will need to complete 3 of these four areas*	
5	American Experience	0-3
6	Creative Drive	0-3
7	Global Awareness	0-3
8	Mind and Body	0-3
9		
10	Tier 3 Connections Capstone	3
11	**General Education Credits**	**9-12**
12	**Remaining Major Program Requirements**	
13	**Course**	**Credits**
14		
15	BIO 220 Genetics (If BIO 262 Genetics and Lab or BIO 263 Molecular Genetics was not taken at the community college.)	(4)
16	Select one Entry Level Anatomy/Physiology BIO 230 – Plant Anatomy and Morphology or BIO 231 – Comparative Vertebrate Anatomy or BIO 235 - Histology	4
17	Select one Upper Level Anatomy/Physiology BIO 301 – Physiology or BIO 401 – Animal Physiology or BIO 420 – Plant Physiology or BIO 454 – Brain Anatomy and Transmission	4
18	Select one Entry Level Cell/Molecular Biology – if one of the following was not taken at the community college: BIO 208 Forensic Science with Lab BIO 222 Molecular Biotechniques BIO 225 Introduction to Biotechnology BIO 235 Microbiology BIO 264 Molecular and Cellular Biology Then take **BIO 205 – Forensic Biology** **BIO 233 – General Microbiology** **BIO 236 – Cell Biology** **BIO 240 – Human Heredity (3 cr)** **BIO 296 – Genomics I**	(3-4)
19	Select one Upper Level Cell/Molecular Biology	4

	BIO 335 – Pathogenic Microbiology or BIO 360- Plant Growth and Development or BIO 435 – Developmental Biology or BIO 436 – Molecular Biology or BIO 451 – Tissue Culture or BIO 466 – Advanced Molecular and Cell Biology or BIO 467 – Laboratory Course in Biotechnology	
20	Select one Entry Level Biodiversity/ Ecology/ Organismal – If one of the following was not taken at the community college: BIO 270 Ecology BIO 272 Marine Ecology BIO 275 Entomology Then take **BIO 202 – Ecology or** **BIO 210 – Environmental Biology and Conservation (3 cr) or** **BIO 228- Vertebrate Zoology or** **BIO 229 – Invertebrate Zoology or** **BIO 250 – Plant Taxonomy and Systematics**	(3-4)
21	Select one Upper Level Biodiversity/ Ecology/ Organismal BIO 334 – Microbial Ecology or BIO 337 – Medically Important Arthropods (3 cr) or BIO 427 – Entomology or BIO 429 – Limnology or BIO 430 – Marine Ecology or BIO 432 – Mycology or BIO 438 – Aquatic Entomology or BIO 440 – Parasitic Infections (3 cr) or BIO 460 – Paleontology	3-4
22	One other upper level BIO course from upper level lists above OR BIO 497 – In-service Training in Biology HON 495 – Senior Thesis BIO 499 – Independent Study and Research	3-4
23		
24	**Program Course Credits**	**26-32**
25	**Remaining Open Electives**	
26	**Courses**	**Credits**
27	**Open Elective credits**	**16-25**
28		
29	**Total Credits Remaining for the 4-Year Degree**	**60**

Credits Remaining in the four-year degree
Biology B.S.
Students must complete 2 "W" courses at SCSU.

1	**Southern Connecticut State University**	
2	**Remaining General Education Courses**	
3	**Course**	**Credits**
4	*One additional general education requirement may be fulfilled at the community college. Students will need to complete 3 of these 4 areas*	
5	American Experience	0-3
6	Creative Drive	0-3
7	Global Awareness	0-3
8	Mind and Body	0-3
9		
10	Tier 3 Connections Capstone	3
11	**General Education Credits**	**9-12**
12	**Remaining Major Program Requirements**	
13	**Course**	**Credits**
14	PHY 200 General Physics I if not taken at the community college	(4)
15	PHY 201 General Physics II if not taken at the community college	(4)
16	CHEM 260 Organic Chemistry I if not taken at the community college	(4)
17	Lines 13-15 will add up to 4-8 credits	4-8
18		
19	BIO 220 Genetics (If BIO 262 Genetics and Lab or BIO 263 Molecular Biology was not taken at the community college.)	(4)
20	<u>Select one Entry Level Anatomy/Physiology</u> BIO 230 – Plant Anatomy and Morphology or BIO 231 – Comparative Vertebrate Anatomy or BIO 235 - Histology	4
21	<u>Select one Upper Level Anatomy/Physiology</u> BIO 301 – Physiology or BIO 401 – Animal Physiology or BIO 420 – Plant Physiology or BIO 454 – Brain Anatomy and Transmission	4
22	<u>Select one Entry Level Cell/Molecular Biology</u>– if one of the following was not taken at the community college: BIO 208 Forensic Science with Lab BIO 222 Molecular Biotechniques BIO 225 Introduction to Biotechnology BIO 235 Microbiology BIO 264 Molecular and Cellular Biology Then take one of **BIO 205 – Forensic Biology** **BIO 233 – General Microbiology**	(3-4)

	BIO 236 – Cell Biology **BIO 240 – Human Heredity (3 cr)** **BIO 296 – Genomics I**	
23	Select one Upper Level Cell/Molecular Biology BIO 335 – Pathogenic Microbiology or BIO 360- Plant Growth and Development or BIO 435 – Developmental Biology or BIO 436 – Molecular Biology or BIO 451 – Tissue Culture or BIO 466 – Advanced Molecular and Cell Biology or BIO 467 – Laboratory Course in Biotechnology	4
24	Select one Entry Level Biodiversity/ Ecology/ Organismal – If one of the following was not taken at the community college: BIO 270 Ecology BIO 272 Marine Ecology BIO 275 Entomology Then take **BIO 202 – Ecology or** **BIO 210 – Environmental Biology and Conservation (3 cr) or** **BIO 228- Vertebrate Zoology or** **BIO 229 – Invertebrate Zoology or** **BIO 250 – Plant Taxonomy and Systematics**	(3-4)
25	Select one Upper Level Biodiversity/ Ecology/ Organismal BIO 334 – Microbial Ecology or BIO 337 – Medically Important Arthropods (3 cr) or BIO 427 – Entomology or BIO 429 – Limnology or BIO 430 – Marine Ecology or BIO 432 – Mycology or BIO 438 – Aquatic Entomology or BIO 440 – Parasitic Infections (3 cr) or BIO 460 – Paleontology	3-4
26	One other upper level BIO course from upper level lists above OR BIO 497 – In-service Training in Biology HON 495 – Senior Thesis BIO 499 – Independent Study and Research	3-4
27	MAT 221 – Intermediate Applied Statistics	4
28		
29	**Program Course Credits**	**31-48**
30	**Remaining Open Electives**	
31	**Courses**	**Credits**
32	**Open Elective credits**	**0-20**
33		
34	**Total Credits Remaining for the 4-Year Degree**	**60-69**

Credits Remaining in the four-year degree
Biology – Professional Option B.A.

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.* *For this program, the student may have completed one additional general education requirement in General Education Elective / Second Exposure to Creative Process or in Intercultural Competence. Either will contribute to the Explorations requirement. See lines 6 and 7.*	
5	Health and Wellness	3
6	Intercultural Competency	(3)
7	General Education Elective / Second Exposure (If completed at the community college, then add three credits to Open Electives.) See line 4.	(3)
8	Up to 10 credits for Explorations requirement. See line 4. Lines 5-7 and 9 may contribute to this requirement.	0-10
9	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 the Intercultural Competence. Students will receive extra open elective credit at WCSU for any portion of this requirement completed before transferring.	3
10	*The following must be taken at WCSU:*	
11	Written Comm III – embedded in a major course	0
12	Culminating Gen Ed Experience – may be satisfied by a major capstone	0
13	**General Education Credits**	**9-22**
14	**Remaining Major Program Requirements**	
	Course	**Credits**
15	BIO 205 Animal Physiology	4
16		
17	BIO 200 Ecology if not taken at the community college	(4)
	Biology Elective – 200-level or above – if Ecology was taken at the community college	(4)
18	A total of 4 credits will be required from lines 17-18.	4
19		
20	BIO 300 Cell Biology	4
21	BIO 312 Genetics	4
22	BIO 325 Evolutionary Biology	3
	BIO 360 Scientific Communication	2
23	BIO 480 Group Senior Research *or* BIO 490 Senior Research	3
24		
25	CHE 210 Organic I if not taken at the community college	(4)
26	CHE 211 Organic II if not taken at the community college	(4)
27	Science/Math Approved Electives, chosen with department approval.	(2-6)

28	Lines 25-27 will add up to 22 credits; 11 of these credits will have been completed at the community college, 8 with either the Organic Chemistry sequence or the Physics sequence and 3 with Precalculus, which also fulfills a general education requirement.	11
35		
36	**Program Course Credits**	**35**
37	**Remaining Open Electives**	
38	**Courses**	**Credits**
39	**Open Elective credits**	**3-26**
40	**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.**	
41	**Total Credits Remaining for the 4-Year Degree**	**60**

Credits Remaining in the four-year degree
Biology – Ecological Option B.A.

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.* *For this program, the student may have completed one additional general education requirement in General Education Elective / Second Exposure to Creative Process or in Intercultural Competence. Either will contribute to the Explorations requirement. See lines 6 and 7.*	
5	Health and Wellness	3
6	Intercultural Competency	(3)
7	General Education Elective / Second Exposure (If completed at the community college, then add three credits to Open Electives.) See line 4.	(3)
8	Up to 10 credits for Explorations requirement. See line 4. Lines 5-7 and 9 may contribute to this requirement.	0-10
9	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 the Intercultural Competence. Students will receive extra open elective credit at WCSU for any portion of this requirement completed before transferring.	3
10	*The following must be taken at WCSU:*	
11	Written Comm III – embedded in a major course	0
12	Culminating Gen Ed Experience – may be satisfied by a major capstone	0
13	**General Education Credits**	**9-22**
14	**Remaining Major Program Requirements**	
15	**Course**	**Credits**
16	BIO 205 Animal Physiology	4
17	BIO 216 Microbiology if not taken at the community college	(4)
18	BIO 200 Ecology if not taken at the community college	(4)
19	11-12 credits of Biology Major Electives, 200-level or above. 4-8 of these credits may have been taken at the community college.	(3-12)
20	Students will have 11-12 credits of lines 16-18 remaining. Courses will depend upon the choices made at the community college.	11-12
21	BIO 312 Genetics	4
22	BIO 325 Evolutionary Biology	3
23	BIO 360 Scientific Communication	2
24	BIO 320 Conservation Ecology or BIO 450 Population Ecology or BIO 475 Climate Ecology	3-4
25	BIO 480 Group Senior Research *or* BIO 490 Senior Research	3
26	3-4 credits in Physical Sciences/Math Courses, chosen from: All BIO courses 200 level or above	3-4

	All CHE courses 200 level or above MAT 170 Calculus of Polynomials (3) MAT 171 Calculus I with Review MAT 181 Calculus I – if not taken at the community college MAT 182 Calculus II PHY 110 General Physics I w/Calculus PHY 111 General Physics II w/Calculus PHY 120 General Physics I PHY 121 General Physics II AST 150 General Astronomy MTR 150 Meteorology ES 110 Physical Geography CS 140 Introduction to Programming CS 143 Visual BASIC (3)	
27	MAT 115 Biostatistics OR MAT 120 Elementary Statistics	3
28	**Program Course Credits**	**36-39**
29	**Remaining Open Electives**	
30	**Courses**	**Credits**
31	**Open Elective credits**	**0-15**
32	**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.**	
33	**Total Credits Remaining for the 4-Year Degree**	**60-61**