

CSCU Physics Transfer Pathway 2019-2020

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Changes

The CSCU Pathway Transfer A.A. Degree: Physics Studies was approved by the BOR during AY 2016-17 and made available to students in AY 2017-18.

09/13/2017	Clarified Additional General Education 1 & 2 requirements Removed Foreign Language Requirements for SCSU Added IDS 101 for COSC
07/26/2018	Removed COSC program
08/01/2018	SCSU: Added EGR 471 option for capstone requirement
10/31/2018	SCSU: Corrected errors

CSCU Transfer Degree Objectives and Outcomes

Approved by the Physics Studies Work Group; the Framework Implementation and Review Committee; and the Academic Council for immediate use in college catalogs, on college websites, and in program marketing materials.

Physics Studies

Program Objectives:

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

Student Learning Outcomes

1. Communication using terminology appropriate to Physics Studies.
2. Understand conceptual, theoretical and experimental methods used in Physics, and their applications to other fields and disciplines
3. Develop critical thinking, and analytical and computational problem-solving skills.
4. Recognize the broader impact of Physics in Society.

AY 2019-2020

CSCU Pathway Transfer A.A. Degree: Physics Studies

1	FRAMEWORK30		
2	<i>Section A: Common Designated Competencies</i>		
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	<i>Section B: Campus Designated Competencies</i>		
12	Competency 1	General Education Elective	3 credits
13	Competency 2	General Education Elective	3 credits
14	Framework30 Total		33 credits

15	PATHWAY30		
16	<i>Additional General Education Courses</i>		
17	Additional General Education 1: Creativity This section will include a list of courses that fit all of the five 4-year school categories.	CCSU – Study Area I: Arts & Humanities ECSU – Creative Expressions SCSU – Creative Drive WCSU – General Education Elective CO – General Education Elective	3 credits
18	Additional General Education 2: Global Knowledge This section will include a list of courses that fit all of the five 4-year school categories.	CCSU - Study Area II: Social Sciences ECSU – Individuals and Society SCSU – Global Awareness WCSU – General Education Elective CO – Global Understanding	3 credits
19	<i>Major Program Requirements</i>		
20	PHY 221	Calculus-Based Physics I	4 credits
21	PHY 222	Calculus-Based Physics II	4 credits
22	MAT 256	Calculus II	4 credits
23	MAT 268	Calculus III: Multivariable	4 credits
24	MAT 285 (3 credits: ACC, GCC, HCC, MXCC, NVCC, NCC, TRCC, TXCC) MAT 286 (4 credits: MCC, QVCC, NCCC)	Differential Equations	3-4 credits (4 credits if transferred from MCC or QVCC to CCSU)
25	<i>Unrestricted Electives</i>		3 credits
26	Students should consider beginning or completing work on foreign language requirements not already met in high		

	school and beginning work on minor requirements of some CSUs. They may also complete other General Education requirements (for CCSU, WCSU, SCSU, and CO—but NOT ECSU). <i>Include the phrase in parentheses only if additional General Education courses are designated above.</i>		
27	Pathway30 Total		28-29 credits
28	Physics Pathway Total		61-62 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 61-62 credits/contact hours. Students who place above the starting sequence of math for this pathway will be able to substitute unrestrictive electives.

AY 2019-2020

**Transfer Pathway and Degree Program
Central Connecticut State University**

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

Physics B.S.

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	3	English 110	3
8	Written II	Gen Ed	3	Skill Area I – Communication	3
9	Scientific Reasoning	CHE 121 General Chemistry I	4	CHEM 161 General Chemistry CHEM 162 General Chemistry Laboratory	3 1
10	Scientific Knowledge	CHE 122 General Chemistry II	4	CHEM 260 Foundations of Inorganic 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	3	Study Area II – History	3
13	Social Phenomena	Gen Ed	3	Study Area II – Social Science	3
14	Aesthetic Dimensions	Gen Ed	3	Study Area I – Arts and Humanities	3
15	Section B				
16	Competency:	Gen Ed	3	Skill Area IV – University Requirement	3
17	Competency:	Gen Ed	3	Study Area III – Behavioral Sciences	3
18	Framework30 Credits		33		33
19	Pathway30				
20	Additional General Education Courses				
21	Additional General Education 1: Creativity		3	Study Area I – Arts and Humanities	3
22	Additional General Education 2: Global Knowledge		3	Study Area II – Social Sciences	3
23				Study Area I – Literature	3
24				Study Area III – Behavioral Sciences	3
25	MAT 256 Calculus II		4	Skill Area II – Math/Stat/ Comp Sci: MATH 221 Calculus II	4

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	General Education Credits:	39		55
28	Major Program Courses			
29	PHY 221 Calculus-Based Physics I	4	PHYS 125 University Physics I	4
30	PHY 222 Calculus-Based Physics II	4	PHYS 126 University Physics II	4
31			PHYS 220 Mechanics I	3
32			PHYS 250 Intermediate Lab I	1
33			PHYS 305 Foundations of Electricity and Magnetism	3
34			PHYS 320 Heat and Thermodynamics	3
35			PHYS 325 Optics	4
36			PHYS 331 Electronics I	3
37			PHYS 350 Intermediate Lab II	1
38			PHYS 425 Modern Physics	3
39			PHYS 450 Advanced Laboratory Techniques	1
40			PHYS 460 Seminar in Physics	1
41			PHYS 470 Quantum Mechanics	3
42			PHYS 471 Quantum Mechanics II	3
43	MAT 268 Calculus III: Multivariable	4	MATH 222 Calculus III	4
47	Program Course Credits	16		41
48	Minor Course Credits			18-21
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 CCSU.			
51	MAT 285 Differential Equations (ACC, GCC, HCC, MXCC, NVCC, NCC, TRCC, TXCC)	3	MATH 355 Differential Equations	3-4
	MAT 286 Differential Equations (MCC, QVCC)	4		
51	Open Elective credits	3		3
52	Total Credits at the Community College	61-62	Total Credits for the 4-Year Degree	120-121

**Transfer Pathway and Degree Program
Southern Connecticut State University**

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

Physics B.S. – Concentration: General

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	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 I	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	Additional General Education 1: Creativity		3	Creative Drive	3
22	Additional General Education 2: Global Knowledge		3	Global Awareness	3
23	<i>Select one of two from the following two areas</i>				3
24				American Experience	0-3
25				Mind and Body	0-3
26					
27				Must be taken at SCSU:	
28				Select one: EGR 471 Capstone Experience in Engineering PHY 471 Capstone Experience in Physics	3
29	General Education Credits:		39		45
30	Major Program Courses				

31	PHY 221 Calculus-Based Physics I	4	PHY 230 Physics for Scientists and Engineers I (C- or better)	4
32	PHY 222 Calculus-Based Physics II	4	PHY 231 Physics for Scientists and Engineers II (C- or better)	4
33			PHY 309 Modern Physics (C- or better)	3
34			PHY 370 Modern Physics Laboratory (C- or better)	2
35			PHY 400 Classical Mechanics I	3
36			PHY 401 Classical Mechanics II	3
37			PHY 406 Electricity and Magnetism	3
38			PHY 461 Methods in Physics Research	2
39	MAT 256 Calculus II	4	MAT 151 Calculus II	4
40	MAT 268 Calculus III: Multivariable	4	MAT 252 Calculus III	4
41	MAT 285 Differential Equations (ACC, GCC, HCC, MXCC, NVCC, NCC, TRCC, TXCC)	3	MAT 245 Differential Equations	3
	MAT 286 Differential Equations (MCC, QVCC)	4		
42			Electives in Physics	12
43				
44			Select one CSC course numbered 102 or higher	3
45				
46				
47				
48	Program Course Credits:	19-20		50
49	Open Electives			
50				
51	Open Elective credits	3		25
52	Total Credits at the Community College	61-62	Total Credits for the 4-Year Degree	120

**Transfer Pathway and Degree Program
Southern Connecticut State University**

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

Physics B.A.

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	3	FYE	3
8	Written II	Gen Ed	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 I	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 (30-31):				33
19	Pathway30				
20	Additional General Education Courses				
21	Additional General Education 1: Creativity		3	Creative Drive	3
22	Additional General Education 2: Global Knowledge		3	Global Awareness	3
23	<i>Select one of two from the following two areas</i>				3
24				American Experience	0-3
25				Mind and Body	0-3
26					
27			39	Must be taken at SCSU	
28				Select one: EGR 471 Capstone Experience in Engineering PHY 471 Capstone Experience in Physics	3
29	General Education Credits				45

Major Program Courses				
30				
31	PHY 221 Calculus-Based Physics I	4	PHY 230 Physics for Scientists and Engineers I (C- or better)	4
32	PHY 222 Calculus-Based Physics II	4	PHY 231 Physics for Scientists and Engineers II (C- or better)	4
33			PHY 309 Modern Physics (C- or better)	3
34			PHY 370 Modern Physics Laboratory (C- or better)	2
35			PHY 400 Classical Mechanics I	3
36			PHY 406 Electricity and Magnetism	3
37			PHY 461 Methods in Physics Research	2
38			Electives in Physics	6
39				
40	MAT 256 Calculus II	4	MAT 151 Calculus II	4
41	MAT 268 Calculus III: Multivariable	4	MAT 252 Calculus III	4
42	MAT 285 Differential Equations (ACC, GCC, HCC, MXCC, NVCC, NCC, TRCC, TXCC)	3	MAT 245 Differential Equations	3
	MAT 286 Differential Equations (MCC, QVCC)	4		
43				
44				
45				
46				
47				
48				
49	Program Course Credits	19-20		38
50	Open Electives			
51				
52	Open Elective credits	3		37
53	Total Credits at the Community College	61-62	Total Credits for the 4-Year Degree	121

Transfer Pathway and Degree Program
Credits remaining in the four-year degree
Physics B.S.

1	Central Connecticut State University	
2	Remaining General Education Courses	
3	Course	Credits
4	Study Area I – Literature	3
5	Study Area III – Behavioral Sciences	3
6		
7	Skill Area III – 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
8	General Education Credits	12
9	Remaining Major Program Requirements	
10	Course	Credits
11	PHYS 220 Mechanics I	3
12	PHYS 250 Intermediate Lab I	1
13	PHYS 305 Foundations of Electricity and Magnetism	3
14	PHYS 320 Heat and Thermodynamics	3
15	PHYS 325 Optics	4
16	PHYS 331 Electronics I	3
17	PHYS 350 Intermediate Lab II	1
18	PHYS 425 Modern Physics	3
19	PHYS 450 Advanced Laboratory Techniques	1
20	PHYS 460 Seminar in Physics	1
21	PHYS 470 Quantum Mechanics	3
22	PHYS 471 Quantum Mechanics II	3
23		
24	Program Course Credits	29
25	Minor – Students should consider beginning work on a minor at the community college.	18-21
26	Remaining Open Electives	
27	Courses	Credits
28	Open Elective credits	0
29	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.	
30	Total Credits Remaining for the 4-Year Degree	59

Transfer Pathway and Degree Program
Credits remaining in the four-year degree
Physics B.S. – Concentration: General
Students must complete 2 “W” courses at SCSU.

1	Southern Connecticut State University	
2	Remaining General Education Courses	
3	Course	Credits
4		
	Select one of two from the following two areas:	3
5	American Experience	0-3
6	Mind and Body	0-3
7	Select one: EGR 471 Capstone Experience in Engineering PHY 471 Capstone Experience in Physics	3
8	General Education Credits	6
9	Remaining Major Program Requirements	
10	Course	Credits
11	PHY 309 Modern Physics (C- or better)	3
12	PHY 370 Modern Physics Laboratory (C- or better)	2
13	PHY 400 Classical Mechanics I	3
14	PHY 401 Classical Mechanics II	3
15	PHY 406 Electricity and Magnetism	3
16	PHY 461 Methods in Physics Research	2
17	Electives in Physics	12
18		
19	Select one CSC course numbered 102 or higher	3
20		
21	Program Course Credits	31
22	Remaining Open Electives	
23	Courses	Credits
24	Open Elective credits	22
25		
26	Total Credits Remaining for the 4-Year Degree	59

Transfer Pathway and Degree Program
Credits remaining in the four-year degree
Physics B.A.
Students must complete 2 "W" courses at SCSU.

1	Southern Connecticut State University	
2	Remaining General Education Courses	
3	Course	Credits
4		
5	Select one of two from the following two areas:	3
6	American Experience	0-3
7	Mind and Body	0-3
8	Select one: EGR 471 Capstone Experience in Engineering PHY 471 Capstone Experience in Physics	3
9	General Education Credits	6
10	Remaining Major Program Requirements	
11	Course	Credits
12	PHY 309 Modern Physics (C- or better)	3
13	PHY 370 Modern Physics Laboratory (C- or better)	2
14	PHY 400 Classical Mechanics I	3
15	PHY 406 Electricity and Magnetism	3
16	PHY 461 Methods in Physics Research	2
17	Electives in Physics	6
18		
19		
20	Major Program Courses:	19
21	Remaining Open Electives	
22	Courses	Credits
23	Open Elective credits	34
24		
25	Total Credits Remaining for the 4-Year Degree	59