

Exhibit 4

TRANSFER ADVISING GUIDE

**Bucks County Community College to University of the Sciences in Philadelphia
A.S. Biology (1003) → B.S. Physics (Tracks: Biophysics, Medical Physics, Pre-Med)**

**Bucks Associate of Science
Biology (1003)**

**USciences Bachelor of Science Physics
(Biophysics, Medical Physics, Pre-Med)**

Bucks Courses	Cr.	USciences Courses	Cr.
BIOL121 Biological Principles I	4	BS132 Introductory Biology I BS134 Introductory Biology I Lab [BS130 Introductory Biology I for students transferring prior to Fall 19]	3 1
BIOL122 Biological Principles II	4	BS133 Introductory Biology II BS135 Introductory Biology II Lab [BS131 Introductory Biology II for students transferring prior to Fall 19]	3 1
BIOL220 Principles of Ecology	4	BS377 Ecology <i>(serves as Elective)</i>	4
BIOL228 Microbiology	4	BS243 Microbial Science BS244 Microbial Science Lab [BS240 Basics of Microbiology for students transferring prior to Fall 19] (serves as Free Elective)	3 1
CHEM121 Chemistry I	4	CH111 Principles of Chemistry I CH113 Principles of Chemistry Lab I	3 1
CHEM122 Chemistry II	4	CH112 Principles of Chemistry II CH114 Principles of Chemistry Lab II	3 1
CHEM221 Organic Chemistry I	5	CH211 Principles of Organic Chemistry I CH213 Principles of Organic Chemistry Lab I	3 1
CHEM222 Organic Chemistry II	5	CH212 Principles of Organic Chemistry II CH214 Principles of Organic Chemistry Lab II	3 1
COMP110 English Composition I	3	WR101 Writing & Rhetoric I	3
COMP111 English Composition II	3	WR102 Writing & Rhetoric II	3
COMM110 Effective Speaking	3	CO101 Introduction to Com (Replaces CO204)	3
MATH125 Pre-Calculus	4	MA107 Pre-calculus	3
MATH140 Calculus I (instead of MATH122)	4	MA122 Calculus	4
Social Sciences/Diversity Choose One	3	<i>(serves as GenEd MD Requirement)</i>	3
ECON111 Principles of Economics: Macro POLI111 American National Government PSYC110 Introduction to Psychology		EC101 Introduction to Macroeconomics PO101 Intro to Political Sci & Am Gov't PS101 Introduction to Psychology	

SOCI110 Introduction to Sociology		SO101 Introduction to Sociology	
Arts/Humanities Choose One	3	(serves as GenEd MD Requirement)	3
Electives (6 credits): Choose One: [KINS 106,110,116,118,120,122,124,129, 130,133,134,135,141,142,145,150,154,155,156, 170,172,175-179,188,189]	2	PE101/102 Physical Education I/II	1
AND			
PHYS121 Physics I	4	PY211 Physics I	4
Bucks credits toward AS	63	Credits Accepted	59
Additional Courses Necessary to Enter USciences with Junior (U3) Status:			
PHYS122 Physics II	4	PY212 Physics II	4
MATH141 Calculus II	4	MA221 Calculus II	4
MATH242 Calculus III	4	MA222 Calculus III	4
Total Bucks Credits	75	Total Credits Accepted	71

A minimum 2.7 cumulative GPA is required for admission.

A minimum grade of “B” in all science and mathematics courses (Prefixes: CHEM, MATH, PHYS, BIOL). Students who do not meet these minimum grade requirements can still transfer under the terms of this articulation agreement, subject to departmental review and approval.

The courses encompassed in the A.S. degree from Bucks must be completed within the three years preceding matriculation at USciences. Students who take more than 3 years to complete the A.S. degree can still transfer under this articulation agreement, subject to departmental review and approval.

PY100 - Physics Orientation (1 cr) will be waived for students transferring to USciences after earning the A.S. in Biology (1003). However, the total credits required for graduation (includes transfer credits) will remain unchanged.

Graduation from USciences with a BS degree requires completion of specified courses and a total of 120-136 credit hours, depending upon the degree program. In order to enter USciences with U3 (junior) status and to facilitate the completion of a BS degree in two years of study at USciences, all students are strongly advised to complete more than 60 total credits of course work which is eligible for transfer to USciences. Students interested in transferring to USciences are strongly urged to contact the USciences Admission Office early in their enrollment at Bucks for advising.

In addition to the coursework provided in the above table, the following types of courses will be needed to complete the *General Education Discipline Requirements* in USciences' General Education Curriculum:

- 6 credits in Social Sciences
- 6 credits in Humanities

Some or all of these 12 credits of coursework can be taken at Bucks or after transferring to USciences (currently included in the 3rd and 4th year at USciences). If the 12 credits are taken at Bucks, they should be selected from the following lists:

<p>6 credits in Social Sciences: Select TWO CRIJ 100, 110,115,116,120,130,140,160,210,220, 230,250,260,270,275,280,285 ECON 111,112,120 POLI 130, 111,112,120 ,212 PSYC 100,110,160,180,181,185,190,200,205,215, 230,270,280 SOCI 120,130,140,150,160 SSWK 115,140,215,255</p>	<p>GenEd Discipline Requirements – Social Sciences SO207 Crime, Drugs and Policy EC101, EC201, ECX01 PO101, POX01</p> <p>PS SO, AN SO</p>
<p>6 credits in Humanities: Select TWO AMSL 110,111 COMM 111,210,230 FREN 110,111,201,202,250,251 GRMN 110,111,201,202,250,251 HIST 101,111,112,121,126,131,136,139,140,141, 143,144,146,149,151-156,159,160,170,172-178,180, 190,194-199,200-208,210,214,216,217,218,219,239, 245,281,288 HUMN 107,108,110-114,120,121,122,125,127, 128,129,166 ITAL 110,111,201,202 JOUR 155,175,275,276,277,278,280 JPNS 101,102 LITR 205,206,231,232,234,235,246,254,255,261,262, 264,271,273,275,277,278,279 MUSC 100,101,103,105,106,111,112,115,116,124, 129,130,188,201,202,206,211,212,215,216,230 PHIL 105,111,115,125,140,145 SPAN 110,111,201,202,250,251 VAFA 100,110,141,147,148,149,151,157,160,161, 165,167,168,169,171,181,191-196,200,202,203, 210,211,242,246,249,257,260,261,271,282 VAFW 100,133,136,137,138,140,145,180,181, 190,280</p>	<p>GenEd Discipline Requirements – Humanities HUX01 HUX01 FR, HU GE, HU HI, HU</p> <p>HU</p> <p>IT, HU EN HU EN</p> <p>MU</p> <p>SP AR</p> <p>AR</p>

Suggested checklist for 3rd and 4th year at USciences for **BS in Physics (Biophysics track)** based on current approved curriculum:

(this checklist is for planning purpose only and it is subject to changes; it does not constitute a contract)

THIRD YEAR AT USCIENCES		
PY 213	Physics III	3
ST 320	Introduction to Probability	3
PY 301	Modern Physics I	3
PY 310	Mechanics	3
PY 370	Math Methods for the Phys Sci I	3
MA 316	Linear Algebra	3
MA 320	Differential Equations	3
PY 380	Electronics	3
PY 406	Advanced Lab	1
PY 410	Electricity and Magnetism	3
PY 371	Math Methods for the Phys Sci II	3
CS 201*	Computer Programming I	3

FOURTH YEAR AT USCIENCES		
PY 495	Undergraduate Research in Physics	2
PY 420	Optics and Wave Phenomena	3
PY 450	Quantum Mechanics	3
CH 341	Molecular Structure Biochemistry	3
PY 431	Statistical Mechanics	3
PY 496	Advanced Research in Physics	3
PY 340	Biophysics I	3
	GenEd Humanities Requirement	6
	GenEd Social Sciences Requirement	6

* students transferring Fall 19 and beyond will have to take this additional course

Suggested checklist for 3rd and 4th year at USciences for **BS in Physics (Medical Physics track)** based on current approved curriculum:

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THIRD YEAR AT USCIENCES		
PY 213	Physics III	3
ST 320	Introduction to Probability	3
PY 301	Modern Physics I	3
PY 310	Mechanics	3
PY 380	Electronics	3
MA 320	Differential Equations	3
CH 341	Molecular Structure Biochemistry	3
PY 406	Advanced Lab	1
PY 410	Electricity and Magnetism	3
PY 302	Modern Physics II	3
	Free Elective	3

FOURTH YEAR AT USCIENCES		
PY 495	Undergraduate Research in Physics	2
PY 420	Optics and Wave Phenomena	3
PY 412	Physics of Radiation Therapy	3
PY 411	Advanced Electromagnetism	3
	GenEd Humanities Requirement	6
	GenEd Social Sciences Requirement	6
PY 496	Advanced Research in Physics	3
PY 340	Biophysics I	3
PY 305	Physics Seminar	1

Suggested checklist for 3rd and 4th year at USciences for **BS in Physics (Pre-Med track)** based on current approved curriculum:

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THIRD YEAR AT USCIENCES		
PY 213	Physics III	3
	Statistics Elective	3
PY 301	Modern Physics I	3
PY 310	Mechanics	3
PY 380	Electronics	3
MA 320	Differential Equations	3
CH 341	Molecular Structure Biochemistry	3
PY 406	Advanced Lab	1
PY 410	Electricity and Magnetism	3
PY 302	Modern Physics II	3
BS 466	Genetics	4
	Free Elective	3

FOURTH YEAR AT USCIENCES		
PY 495	Undergraduate Research in Physics	2
PY 380	Electronics	3
PY 420	Optics and Wave Phenomena	3
PY 412	Physics of Radiation Therapy	3
	GenEd Humanities Requirement	6
	GenEd Social Sciences Requirement	6
PY 496	Advanced Research in Physics	3
PY 340	Biophysics I	3
PY 305	Physics Seminar	1

* students transferring Fall 19 and beyond will have to take this additional course

Progress in Completing USciences' General Education Curriculum

[For the most recent information, see the current USciences Catalog on its website]

Discipline Requirements (minimum of 41 credits)

Discipline Requirement	Community College Courses // USciences Courses*
Natural Science (ONE semester of lab required) 7 credits	CHEM121 CHEM122
Mathematics 6 credits	MATH125 & MATH140
Communication (written & oral) 9 credits	COMP110 & COMP111 & COMM110
Social Sciences 6 credits	Choose Two USciences Course: PO (Political Science), PS (Psychology), SO (Sociology), AN (Anthropology), SS (Social Sciences), EC (Economics), CO (excluding CO 101 and CO 204)
Humanities 6 credits	Choose Two USciences Courses: AC (Arabic), AR (Art), CI (Chinese), CA (Classics), EN (excluding EN 101 and EN 102), FR (French), GE (German), LA (Latin), HI (History), HU (Humanities), MU (Music), PL (Philosophy), RS (Religious Studies), SP (Spanish), WC (World Cultures)
Multidisciplinary Inquiry 6 credits (may be substituted by Social Sciences &/or Humanities courses)	Choose One: ECON111 Principles of Economics: Macro POLI111 American National Government PSYC110 Introduction to Psychology SOCI110 Introduction to Sociology Choose One: Arts/Humanities
Physical Education 1 credit	Choose One: [KINS 106,110,116,118,120,122,124,129, 130,133,134,135, 141,142,145,150,154,155,156, 170,172,175-179,188,189]

Skills, Values, and Attitudes (one approved course for each)

Skills, Values, and Attitudes	Community College Course	USciences Course [RED = courses taken after transferring to USciences]
Ethics		See list of USciences courses approved for Ethics
Information Literacy	BIOL122	
Oral Communication	SOCI110	OR PY305
Reasoning & Problem Solving	PHYS121	
Technology	PHYS121	
Written Communication	PSYCH110	OR USciences course

Skills requirement is usually fulfilled by taking courses that satisfy discipline requirements that are also approved for one or more GenEd skill.