

## Exhibit 22

### TRANSFER ADVISING GUIDE

**Bucks County Community College to University of the Sciences in Philadelphia**  
**A.S. Science (1117) → B.S. Chemistry or B.S. Biochemistry or B.S. Pharmaceutical Chemistry**

**Bucks Associate of Science  
 Science (1117)**

**USciences Bachelor of Science Chemistry or  
 Biochemistry or Pharmaceutical Chemistry**

Bucks Courses	Cr.	USciences Courses	Cr.
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 Intro to Communication <i>(serves as GenEd Social Sciences Requirement)</i>	3
CISC110 Intro to Information Systems	3	CSX01 Computer Science Elective <i>(serves as Elective)</i>	3
CHEM121 Chemistry I	4	CH111 Principles of Chemistry I CH113 Principles of Chemistry Lab I	3 1
CHEM122 Chemistry II <i>(serves as Sciences Elective)</i>	4	CH112 Principles of Chemistry II CH114 Principles of Chemistry Lab II	3 1
PHYS121 Physics I	4	PY211 Physics I	4
PHYS122 Physics II <i>(serves as Sciences Elective)</i>	4	PY212 Physics II	4
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 <i>(serves as Sciences Elective)</i>	4	BS133 Introductory Biology II BS135 Introductory Biology II Lab  [BS131 Introductory Biology II for students transferring prior to Fall 19] <i>(serves as Elective)</i>	3 1
MATH125 Pre-Calculus <i>(serves as Math Elective)</i>	4	MA107 Pre-Calculus	3
MATH140 Calculus I <i>(serves as Math Elective)</i>	4	MA122 Calculus I	4
MATH141 Calculus II <i>(serves as Math Elective)</i>	4	MA221 Calculus II	4
<b>Diversity: Choose One</b> ECON111 Principles of Economics: Macro POLI111 American National Government PSYC110 Introduction to Psychology SOC110 Introduction to Sociology	3	<i>(serves as GenEd Social Sciences Requirement)</i> EC101 Introduction to Macroeconomics PO101 Intro to Political Sci & Am Gov't PS101 Introduction to Psychology SO101 Introduction to Sociology	3

Social/Behavioral Science: <b>Choose any one from:</b> ECON, POLI, PSYC, SOCI	3	<i>(serves as GenEd MD Requirement)</i>	3
Arts/Humanities <b>Choose One</b>	3	<i>(serves as GenEd MD Requirement)</i>	3
CHEM221 Organic Chemistry I <i>(Serves as Elective)</i>	5	CH211 Principles of Organic Chemistry I CH213 Principles of Organic Chemistry Lab I	4
<b>Choose One:</b> <i>(Serves as Elective)</i> [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
<b>Bucks credits toward AS</b>	<b>64</b>	<b>Credits Accepted</b>	<b>61</b>
<b>Additional Courses Necessary to Enter USciences with Junior (U3) Status:</b>			
CHEM222 Organic Chemistry II	5	CH212 Principles of Organic Chemistry II CH214 Principles of Organic Chemistry Lab II	3 1
<b>Total Bucks Credits</b>	<b>69</b>	<b>Total Credits Accepted</b>	<b>65</b>

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.

CH120-Orientation for the Chemical Sciences (1 cr) and MA107 - Precalculus (3 cr) will be waived for transfer students transferring to USciences after earning the A.S. in Science (1117). 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 121-136 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 Humanities

Some or all of these 9 credits of coursework can be taken at Bucks or after transferring to USciences (currently included in the 3<sup>rd</sup> and 4<sup>th</sup> year at USciences). If the 9 credits are taken at Bucks, they should be selected from the following lists:

<b>6 credits in Humanities: Select TWO</b>	<b>GenEd Discipline Requirements – Humanities</b>
<b>AMSL</b> 110,111	HUX01
<b>COMM</b> 111,210,230	HUX01
<b>FREN</b> 110,111,201,202,250,251	FR, HU
<b>GRMN</b> 110,111,201,202,250,251	GE, HU
<b>HIST</b> 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	HI, HU
<b>HUMN</b> 107,108,110-114,120,121,122,125,127, 128,129,166	HU
<b>ITAL</b> 110,111,201,202	IT, HU
<b>JOUR</b> 155,175,275,276,277,278,280	EN
<b>JPNS</b> 101,102	HU
<b>LITR</b> 205,206,231,232,234,235,246,254,255,261,262, 264,271,273,275,277,278,279	EN
<b>MUSC</b> 100,101,103,105,106,111,112,115,116,124, 129,130,188,201,202,206,211,212,215,216,230	MU
<b>PHIL</b> 105,111,115,125,140,145	
<b>SPAN</b> 110,111,201,202,250,251	SP
<b>VAFA</b> 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	AR
<b>VAFW</b> 100,133,136,137,138,140,145,180,181, 190,280	AR
<b>WMST</b> 110	HU

Suggested checklist for 3<sup>rd</sup> and 4<sup>th</sup> year at USciences for **BS in Chemistry** 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		
MA 222	Calculus III	4
CH 331	Basic Inorganic Chemistry	3
CH 366	Principles of Analytical Chemistry	3
CH 367	Analyt and Phys Methods Lab I	1
CH 321	Physical Chemistry I	4
CH 300	Discussions in Chemistry	1
CO 204	Public Speaking	3
CH 322	Physical Chemistry II	4
CH 376	Instrumental Analysis	3
CH 368	Analyt and Phys Methods Lab II	1
CH 404	Literature of Chemistry	1

FOURTH YEAR AT USCIENCES		
CH 401	Seminar in Chemistry I	1
CH 423	Physical Chemistry Lab I	2
CH 431	Inorganic Chemistry	3
CH 341	Molecular Structure Biochemistry	3
	Chemistry Elective	3
	GenEd Humanities Requirement	6
CH 402	Seminar in Chemistry II	1
CH 425	Inorganic and Material Synth Lab	2
	Chemistry Elective	3
	Free Elective	3

Suggested checklist for 3<sup>rd</sup> and 4<sup>th</sup> year at USciences for **BS in Pharmaceutical Chemistry** based on current approved curriculum:

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THIRD YEAR AT USCIENCES		
MA 222	Calculus III	4
CH 331	Basic Inorganic Chemistry	3
CH 300	Discussions in Chemistry	1
CH 321	Physical Chemistry I	4
CO 204	Public Speaking	3
CH 341	Molecular Structure Biochemistry	3
CH 366	Principles of Analytical Chemistry	3
CH 367	Analyt and Phys Methods Lab I	1
CH 322	Physical Chemistry II	4
CH 343	Intermediary Metabolic Biochemistry	3
CH 376	Instrumental Analysis	3
CH 368	Analyt and Phys Methods Lab II	1
CH 404	Literature of Chemistry	1

<b>FOURTH YEAR AT USCIENCES</b>		
	GenEd Humanities Requirement	6
	Pharmaceutical Chemistry Progr Elect	3
CH 411	Medical Chemistry	3
CH 401	Seminar in Chemistry I	1
CH 423	Physical Chemistry Lab I	2
CH 402	Seminar in Chemistry II	1
	Pharmaceutical Chemistry Progr Elect	3
CH 464	Pharmaceutical Analytical Chemistry	3
CH 465	Pharmaceutical Analytical Chem Lab	1

Checklist for 3<sup>rd</sup> and 4<sup>th</sup> year at USciences for **BS in Biochemistry**:  
*(this checklist is for planning purpose only and it is subject to changes; it does not constitute a contract)*

<b>THIRD YEAR AT USCIENCES</b>		
MA 222	Calculus III	4
CH 331	Basic Inorganic Chemistry	3
CH 320	Essentials of Physical Chemistry	4
CH 366	Principles of Analytical Chemistry	3
CH 367	Analyt and Phys Methods Lab I	1
CH 341	Molecular Structure Biochemistry	3
CO 204	Public Speaking	3
CH 444	Biochemistry Laboratory I	1
CH 300	Discussions in Chemistry	1
CH 404	Literature of Chemistry	1
BS 466	Genetics	4
CH 343	Intermediary Metabolic Chemistry	3
CH 445	Biochemistry Laboratory II	1

<b>FOURTH YEAR AT USCIENCES</b>		
CH 401	Seminar in Chemistry I	1
CH 423	Physical Chemistry Lab I	2
	Biochemistry Elective	3
BS 461	Cell Biology	4
	GenEd Humanities Requirement	6
CH 402	Seminar in Chemistry II	1
CH 342	Nucleic Acid Biochemistry	3
	Biochemistry Elective	3

## 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)*

<b>Discipline Requirement</b>	<b>Community College Courses // USciences Courses*</b>
Natural Science ( <b>ONE</b> semester of lab required) <b>7 credits</b>	CHEM121 CHEM122
Mathematics <b>6 credits</b>	MATH125 & MATH140
Communication (written & oral) <b>9 credits</b>	COMP110 & COMP111 & COMM110
Social Sciences <b>6 credits</b>	COMM110  Diversity: <b>Choose One</b> ECON111 Principles of Economics: Macro POLI111 American National Government PSYC110 Introduction to Psychology SOCI110 Introduction to Sociology
Humanities <b>6 credits</b>	<b>Choose Two USciences Courses:</b> 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 <b>6 credits</b> (may be substitute by Social Sciences &/or Humanities courses)	<b>Choose any One from:</b> ECON, POLI, PSYC, SOCI  <b>Choose One:</b> Arts/Humanities
Physical Education <b>1 credit</b>	<b>Choose One:</b> [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)*

<b>Skills, Values, and Attitudes</b>	<b>Community College Course</b>	<b>USciences Course</b> [RED = courses taken after transferring to USciences]
Ethics		CH 300
Information Literacy	BIOL122	CH 404
Oral Communication		CH 401
Reasoning & Problem Solving	BIOL121	
Technology	BIOL121	
Written Communication		CH 423

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