

## Exhibit 15

### TRANSFER ADVISING GUIDE

**Brookdale Community College (Brookdale) to University of the Sciences in Philadelphia  
A.S. Chemistry Option, Mathematics/Science → B.S. Chemistry or B.S. Biochemistry or B.S.  
Pharmaceutical Chemistry**

**Brookdale Associate in Science  
Chemistry Option**

**USciences Bachelor of Science  
Chemistry, Biochemistry, Pharmaceutical Chem**

Brookdale Courses	Cr.	USciences Courses	Cr.
ENGL121 English Composition: The Writing Process	3	WR101 Writing & Rhetoric I	3
ENGL122 English Composition: Writing and Research	3	WR102 Writing & Rhetoric II	3
CHEM101 General Chemistry I <i>(online course NOT accepted for transfer)</i>	5	CH111 Principles of Chemistry I CH113 Principles of Chemistry Lab I	3 1
CHEM102 General Chemistry II <i>(online course NOT accepted for transfer)</i>	5	CH112 Principles of Chemistry II CH114 Principles of Chemistry Lab II	3 1
CHEM203 Organic Chemistry I	5	CH211 Principles of Organic Chemistry I CH213 Principles of Organic Chemistry Lab I	3 1
CHEM204 Organic Chemistry II	5	CH212 Principles of Organic Chemistry II CH214 Principles of Organic Chemistry Lab II	3 1
PHYS121 General Physics I	4	PY211 Physics I	4
PHYS122 General Physics II	4	PY212 Physics II	4
BIOL101 General Biology I (serves as Elective)	4	BS132 Introductory Biology I BS134 Introductory Biology I Lab  [BS130 Introductory Biology I for students transferring prior to Fall 19]	3 1
MATH153 Pre-calculus Mathematics	4	MA107 Precalculus	3
MATH171 Calculus I	4	MA122 Calculus I	4
MATH172 Calculus II	4	MA221 Calculus II	4
COMP129 Information Technology (serves as Technology Competency/Gen Education)	3	CS250 Information Technology <i>(serves as Elective)</i>	3
Humanities Elective <b>Choose One</b>	3-4	<i>(serves as GenEd Humanities Requirement)</i>	3
Social Science Elective <b>Choose One</b>	3	<i>(serves as GenEd MD Requirement)</i>	3
Humanities or Social Science Elective <b>Choose One:</b>	3-4	<i>(serves as GenEd MD Requirement)</i>	3
<b>Brookdale credits toward AS</b>	<b>62-64</b>	<b>Credits Accepted</b>	<b>57</b>
<b>Additional Courses Necessary to Enter USciences BS in Biochemistry with Junior (U3) Status:</b>			
BIOL102 General Biology II	4	BS133 Introductory Biology II BS135 Introductory Biology II Lab	3 1

		[BS131 Introductory Biology II for students transferring prior to Fall 19]	
<b>Total Brookdale Credits</b>	<b>66-68</b>	<b>Total Credits Accepted</b>	<b>61</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 Brookdale 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.

PE101/102-Physical Education I/II (1 cr), CH120-Orientation for the Chemical Sciences (1 cr) will be waived for students transferring to USciences after earning the A.S. in Chemistry Option, Mathematics/Science. 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 Brookdale 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
- 3 credits in Humanities

Some or all of these 9 credits of coursework can be taken at Brookdale 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 Brookdale, they should be selected from the following lists:

<p><b>6 credits in Social Sciences: Select TWO</b></p> <p>ANTH105, 115, 116            ECON105, 106, 107            HGEO105            POLI101, 105, 115            PSYC105, 106, 206, 207, 208, 226            SOCI101, 202, 215</p>	<p><b>GenEd Discipline Requirements – Social Sciences</b></p> <p>AN103, X01, X01            EC101, EC201, ECX01            SSX01            POX01            PS101, X01, 200, X01, 200, 201            SO101, 205, X01</p>
<p><b>3 credits in Humanities: Select ONE</b></p> <p>AMSL101, 102            ARAB101, 102            ARTH105, 106, 107            CHNS101, 102            CINE105            ENGL155, 156, 158, 231, 232, 235, 236, 245, 246, 275            FRCH101, 102, 203, 204, 206, 207            GRMN101, 102, 203, 204            HIST105, 106, 107, 108, 125, 135, 136, 137, 145, 146, 215, 217, 225, 227            HUMN125            ITAL101, 102, 203, 204            JPNS101, 102, 203, 204            MUSI115, 116            PHIL105, 115, 225, 226, 227            PHTY105            PORT101, 102            RUSS101, 102            SPAN101, 102, 203, 204, 207, 215            THTR105, 135</p>	<p><b>GenEd Discipline Requirements – Humanities</b></p> <p>HUX01, X01            AC101, 102            AR101, 340, 340            CI101, HUX01            HUX01            EN314, X01, 201, X01, 313, X01, X01, 334, 336, X01            FR101, 102, X01, X01, X01            GE101, 102, 201, 202            HIX01, X01, X01, X01, X01, X01, X01, 304, X01, X01, X01, X01, X01, X01            HUX01            HUX01, X01, X01, X01            HUX01, X01, X01, X01            MUX01, X01            PLX01, PL101, RS310, PLX01, ET303            HUX01            HUX01, X01            HUX01, X01            SP101, SP102, SP201, SP202, SP303, HUX01            HUX01, X01</p>

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)*

<b>THIRD YEAR AT USCIENCES</b>		
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
	GenEd Humanities Requirement	3

<b>FOURTH YEAR AT USCIENCES</b>		
	GenEd Social Sciences Requirement	6
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
CH 402	Seminar in Chemistry II	1
CH 425	Inorganic and Material Synth Lab	2
	Chemistry Electives	6
	Free Electives	8

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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<b>THIRD YEAR AT USCIENCES</b>		
MA 222	Calculus III	4
CH 331	Basic Inorganic Chemistry	3
	GenEd Social Sciences Requirement	6
CH 300	Discussions in Chemistry	1
CH 321	Physical Chemistry I	4
CH 341	Molecular Structure Biochemistry	3
CH 366	Principles of Analytical Chemistry	3
CO 204	Public Speaking	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	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	9-10
CH 464	Pharmaceutical Analytical Chemistry	3
CH 465	Pharmaceutical Analytical Chem Lab	1
	Free Electives	2

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

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<b>THIRD YEAR AT USCIENCES</b>		
ST 310	Intro to Biostatistics	3
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
CO 204	Public Speaking	3
CH 341	Molecular Structure Biochemistry	3
	GenEd Social Sciences Requirement	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
BS 461	Cell Biology	4
	GenEd Humanities Requirement	3
	Free Elective	3
CH 402	Seminar in Chemistry II	1
CH 342	Nucleic Acid Biochemistry	3
	Biochemistry Elective	6
	Free Electives	2

## 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>	CHEM101 CHEM102
Mathematics <b>6 credits</b>	MATH153 MATH171
Communication (written & oral) <b>9 credits</b>	ENGL121 & ENGL122 CO204
Social Sciences <b>6 credits</b>	<b>Choose Two USciences Courses:</b> PO (Political Science), PS (Psychology), SO (Sociology), AN (Anthropology), SS (Social Sciences), EC (Economics), CO (excluding CO 101 and CO 204)
Humanities <b>6 credits</b>	<b>Choose One:</b> Humanities Elective  <b>Choose One USciences Course:</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 substituted by Social Sciences &/or Humanities courses)	<b>Choose One:</b> Social Science Elective  <b>Choose One:</b> Humanities or Social Science Elective
Physical Education <b>1 credit</b>	Waived

*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		CH 404
Oral Communication		CH 401
Reasoning & Problem Solving	BIOL101	
Technology	BIOL101	
Written Communication		CH423

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