

## Exhibit 17

### TRANSFER ADVISING GUIDE

**Brookdale Community College (Brookdale) to University of the Sciences in Philadelphia**  
**A.S. Physics Option, Mathematics/Science → B.S. Physics (Tracks: General, Material Sciences, Astrophysics)**

**Brookdale Associate in Science  
Physics Option**

**USciences Bachelor of Science  
Physics (General, Material Sc, Astrophysics)**

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
PHYS121 General Physics I	4	PY211 Physics I	4
PHYS122 General Physics II	4	PY212 Physics II	4
PHYS223 General Physics III	4	PY301 Modern Physics I	3
MATH153 Pre-calculus Mathematics	4	MA107 Precalculus	3
MATH171 Calculus I	4	MA122 Calculus I	4
MATH172 Calculus II	4	MA221 Calculus II	4
MATH273 Calculus III	4	MA222 Calculus III	4
MATH285 Linear Algebra (serves as Elective)	3	MA316 Linear Algebra	3
CHEM101 General Chemistry I (serves as General Education credits) <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 (serves as General Education credits) <i>(online course NOT accepted for transfer)</i>	5	CH112 Principles of Chemistry II CH114 Principles of Chemistry Lab II	3 1
COMP129 Information Technology (serves as Technology Competency/Gen Education)	3	CS250 Information Technology (serves as Elective)	3
Social Sciences Elective <b>Choose One</b>	3	<i>(serves as GenEd Social Sciences Requirement)</i>	3
Humanities Elective <b>Choose One</b> <i>(serves as Elective)</i>	3-4	<i>(serves as GenEd Humanities Requirement)</i>	3
Humanities Elective <b>Choose One</b>	3-4	<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>62-65</b>	<b>Credits Accepted</b>	<b>58</b>
<b>Total Brookdale Credits</b>	<b>62-65</b>	<b>Total Credits Accepted</b>	<b>58</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). 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) and PY100 – Physics Orientation (1 cr) will be waived for students transferring to USciences after earning the A.S. in Physics 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:

- 3 credits in Social Sciences
- 3 credits in Humanities

Some or all of these 6 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 6 credits are taken at Brookdale, they should be selected from the following lists:

<p><b>3 credits in Social Sciences: Select ONE</b>            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>            AN103, X01, X01            EC101, EC201, ECX01            SXX01            POX01            PS101, X01, 200, X01, 200, 201            SO101, 205, X01</p>
<p><b>3 credits in Humanities: Select ONE</b>            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>            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 Physics (General 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)*

<b>THIRD YEAR AT USCIENCES</b>		
ST 320	Introduction to Probability	3
MA 320	Differential Equations	3
	GenEd Humanities Requirement	3
PY 213	Physics III	4
PY 310	Mechanics	3
PY 370	Math Methods for Phys Sci I	3
PY 380	Electronics	3
PY 406	Advanced Lab	1
PY 410	Electricity and Magnetism	3
PY 420	Optics and Wave Phenomena	3
PY 450	Quantum Mechanics	3
PY 371	Math Methods for the Phys Sci II	3

<b>FOURTH YEAR AT USCIENCES</b>		
CO 101	Intro to Communication	3
PY 495	Undergraduate Research in Physics	2
	Physics Elective	9
	Physics/Chemistry/Biology Elective	3
PY 431	Statistical Mechanics	3
	GenEd Social Sciences Requirement	3
PY 496	Advanced Research in Physics	3
	Free Elective	2
PY 305	Physics Seminar	3

Suggested checklist for 3<sup>rd</sup> and 4<sup>th</sup> year at USciences for **BS in Physics (Material Science track)** based on current approved curriculum:

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<b>THIRD YEAR AT USCIENCES</b>		
ST 320	Introduction to Probability	3
MA 320	Differential Equations	3
	GenEd Humanities Requirement	3
PY 213	Physics III	4
PY 310	Mechanics	3
PY 370	Math Methods for Phys Sci I	3
PY 380	Electronics	3
PY 406	Advanced Lab	1
PY 410	Electricity and Magnetism	3
PY 420	Optics and Wave Phenomena	3
PY 450	Quantum Mechanics	3
PY 371	Math Methods for the Phys Sci II	3
CO 101	Intro to Communication	3

FOURTH YEAR AT USCIENCES		
PY 480	Introduction to Material Science	3
PY 495	Undergraduate Research in Physics	2
PY 431	Statistical Mechanics	3
	GenEd Social Sciences Requirement	3
PY 470	Solid State Physics	3
PY 496	Advanced Research in Physics	3
PY 440	Intro to Nano Science	3
	Physics/Chemistry/Biology Elective	3
	Free Elective	2
PY 305	Physics Seminar	3

Suggested checklist for 3<sup>rd</sup> and 4<sup>th</sup> year at USciences for **BS in Physics (Astrophysics 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		
ST 320	Introduction to Probability	3
MA 320	Differential Equations	3
	GenEd Humanities Requirement	3
PY 213	Physics III	4
PY 310	Mechanics	3
PY 370	Math Methods for Phys Sci I	3
PY 380	Electronics	3
PY 406	Advanced Lab	1
PY 410	Electricity and Magnetism	3
MA 430	Differential Geometry	3
PY 450	Quantum Mechanics	3
PY 371	Math Methods for the Phys Sci II	3
CO 101	Intro to Communication	3

FOURTH YEAR AT USCIENCES		
PY 463	Physics of Stars and Black Holes	3
PY 495	Undergraduate Research in Physics	2
PY 431	Statistical Mechanics	3
	GenEd Social Sciences Requirement	3
PY 465	Intro to Cosmology	3
PY 496	Advanced Research in Physics	3
	Physics Elective	3
PY 420	Optics and Wave Phenomena	3
	Free Elective	5
PY 305	Physics Seminar	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)*

Discipline Requirement	Community College Courses // USciences Courses*
Natural Science (ONE 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 CO101
Social Sciences <b>6 credits</b>	<b>Choose One:</b> Social Science Elective  <b>Choose One USciences Course:</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> Humanities 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)*

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		See list of USciences courses approved for Inf Literacy
Oral Communication		PY305
Reasoning & Problem Solving	MATH153	
Technology	MATH153	
Written Communication		See list of USciences courses approved for Written Com

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