

## Exhibit 5

### TRANSFER ADVISING GUIDE

#### Brookdale Community College (Brookdale) to University of the Sciences in Philadelphia A.S. Biology Option, Mathematics/Science → B.S. Biochemistry

#### Brookdale Associate in Science Biology Option

#### USciences Bachelor of Science Biochemistry

| 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      |
| BIOL101 General Biology I   | 4   | BS132 Introductory Biology I<br>BS134 Introductory Biology I Lab<br><br>[BS130 Introductory Biology I for students transferring prior to Fall 19]                                | 3<br>1 |
| BIOL102 General Biology II  | 4   | BS133 Introductory Biology II<br>BS135 Introductory Biology II Lab<br><br>[BS131 Introductory Biology II for students transferring prior to Fall 19]                             | 3<br>1 |
| BIOL213 Microbiology<br>(Serves as Career Studies)  | 4   | BS243 Microbial Science<br>BS244 Microbial Science Lab<br><br>[BS240 Basics of Microbiology for students transferring prior to Fall 19]<br>(serves as Program Elective)          | 3<br>1 |
| <b>Choose one:</b><br>BIOL205 Invertebrate Zoology<br>BIOL206 Vertebrate Zoology<br>BIOL207 Marine Biology<br>BIOL208 Ecology and Field Biology<br>BIOL215 Cell and Molecular Biology<br>(Serves as Career Studies) | 4   | BSX01 Biology Elective<br>BSX01 Biology Elective<br>BSX01 Biology Elective<br>BSX01 Biology Elective<br>BSX01 Biology Elective<br>BSX01 Biology Elective<br>(serves as Elective) | 4      |
| CHEM101 General Chemistry I<br><i>(online course NOT accepted for transfer)</i>   | 5   | CH111 Principles of Chemistry I<br>CH113 Principles of Chemistry Lab I   | 3<br>1 |
| CHEM102 General Chemistry II<br><i>(online course NOT accepted for transfer)</i>  | 5   | CH112 Principles of Chemistry II<br>CH114 Principles of Chemistry Lab II   | 3<br>1 |
| CHEM203 Organic Chemistry I   | 5   | CH211 Principles of Organic Chemistry I<br>CH213 Principles of Organic Chemistry Lab I   | 3<br>1 |
| CHEM204 Organic Chemistry II  | 5   | CH212 Principles of Organic Chemistry II<br>CH214 Principles of Organic Chemistry Lab II   | 3<br>1 |
| MATH153 Pre-calculus Mathematics<br>(serves as Elective)  | 4   | MA107 Pre-Calculus   | 3      |
| MATH171 Calculus I  | 4   | MA122 Calculus I   | 4      |

|   |              |   |           |
|---|--------------|---|-----------|
| COMP129 Information Technology<br>(serves as Technology Competency/Gen Education) | 3            | CS250 Information Technology<br>(serves as Free Elective) | 3         |
| Humanities Elective <b>Choose One</b>   | 3-4          | (serves as GenEd Humanities Requirement)                  | 3         |
| Social Science Elective <b>Choose One</b>   | 3            | (serves as GenEd MD Requirement)                          | 3         |
| Humanities or Social Science Elective <b>Choose One</b>                           | 3-4          | (serves as GenEd MD Requirement)                          | 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 with Junior (U3) Status:</b>   |              |   |           |
| PHYS121 General Physics I   | 4            | PY211 Physics I   | 4         |
| PHYS122 General Physics II  | 4            | PY212 Physics II  | 4         |
|   |              |   |           |
| <b>Total Brookdale Credits</b>  | <b>70-72</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 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 CH120-Orientation for the Chemical Sciences (1 cr) will be waived for students transferring to USciences after earning the A.S. in Biology 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<br/>           ECON105, 106, 107<br/>           HGEO105<br/>           POLI101, 105, 115<br/>           PSYC105, 106, 206, 207, 208, 226<br/>           SOCI101, 202, 215</p>  | <p><b>GenEd Discipline Requirements – Social Sciences</b></p> <p>AN103, X01, X01<br/>           EC101, EC201, ECX01<br/>           SXX01<br/>           POX01<br/>           PS101, X01, 200, X01, 200, 201<br/>           SO101, 205, X01</p>   |
| <p><b>3 credits in Humanities: Select ONE</b></p> <p>AMSL101, 102<br/>           ARAB101, 102<br/>           ARTH105, 106, 107<br/>           CHNS101, 102<br/>           CINE105<br/>           ENGL155, 156, 158, 231, 232, 235, 236, 245, 246, 275<br/>           FRCH101, 102, 203, 204, 206, 207<br/>           GRMN101, 102, 203, 204<br/>           HIST105, 106, 107, 108, 125, 135, 136, 137, 145, 146, 215, 217, 225, 227<br/>           HUMN125<br/>           ITAL101, 102, 203, 204<br/>           JPNS101, 102, 203, 204<br/>           MUSI115, 116<br/>           PHIL105, 115, 225, 226, 227<br/>           PHTY105<br/>           PORT101, 102<br/>           RUSS101, 102<br/>           SPAN101, 102, 203, 204, 207, 215<br/>           THTR105, 135</p> | <p><b>GenEd Discipline Requirements – Humanities</b></p> <p>HUX01, X01<br/>           AC101, 102<br/>           AR101, 340, 340<br/>           CI101, HUX01<br/>           HUX01<br/>           EN314, X01, 201, X01, 313, X01, X01, 334, 336, X01<br/>           FR101, 102, X01, X01, X01<br/>           GE101, 102, 201, 202<br/>           HIX01, X01, X01, X01, X01, X01, X01, 304, X01, X01, X01, X01, X01, X01<br/>           HUX01<br/>           HUX01, X01, X01, X01<br/>           HUX01, X01, X01, X01<br/>           MUX01, X01<br/>           PLX01, PL101, RS310, PLX01, ET303<br/>           HUX01<br/>           HUX01, X01<br/>           HUX01, X01<br/>           SP101, SP102, SP201, SP202, SP303, HUX01<br/>           HUX01, X01</p> |

Suggested checklist for 3<sup>rd</sup> and 4<sup>th</sup> year at USciences 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 221                         | Calculus II                        | 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 300                         | Discussions in Chemistry           | 1 |
| CH 404                         | Literature of Chemistry            | 1 |
| BS 466                         | Genetics                           | 4 |
| CH 343                         | Intermediary Metabolic Chemistry   | 3 |

| <b>FOURTH YEAR AT USCIENCES</b> |  |     |
|---------------------------------|--|-----|
| ST310 or MA222                  | Intro to Biostatistics or Calculus III | 3/4 |
| CH 444                          | Biochemistry Laboratory I              | 1   |
| CH 445                          | Biochemistry Laboratory II             | 1   |
| CH 401                          | Seminar in Chemistry I                 | 1   |
| CH 423                          | Physical Chemistry Lab I               | 2   |
| BS 461                          | Cell Biology                           | 4   |
|                                 | GenEd Social Sciences Requirement      | 6   |
| CH 402                          | Seminar in Chemistry II                | 1   |
| CH 342                          | Nucleic Acid Biochemistry              | 3   |
|                                 | GenEd Humanities Requirement           | 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)*

| Discipline Requirement  | Community College Courses // USciences Courses*  |
|---|--|
| Natural Science<br>(ONE semester of lab required) <b>7 credits</b>  | BIOL101<br>BIOL102   |
| Mathematics <b>6 credits</b>  | MATH153<br>MATH171   |
| Communication (written & oral) <b>9 credits</b>   | ENGL121 & ENGL122<br>CO204   |
| Social Sciences <b>6 credits</b>  | <b>Choose Two USciences Courses:</b><br>PO (Political Science), PS (Psychology), SO (Sociology), AN (Anthropology), SS (Social Sciences),<br>EC (Economics), CO (excluding CO 101 and CO 204)  |
| Humanities <b>6 credits</b>   | <b>Choose One:</b> Humanities Elective<br><br><b>Choose One USciences Course:</b><br>AC (Arabic), AR (Art), CI (Chinese), CA (Classics),<br>EN (excluding EN 101 and EN 102), FR (French),<br>GE (German), LA (Latin), HI (History), HU (Humanities),<br>MU (Music), PL (Philosophy), RS (Religious Studies),<br>SP (Spanish), WC (World Cultures) |
| Multidisciplinary Inquiry <b>6 credits</b><br>(may be substituted by Social Sciences &/or Humanities courses) | <b>Choose One:</b> Social Science Elective<br><br><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<br>[RED = courses taken after transferring to USciences] |
|-------------------------------|--------------------------|---|
| Ethics                        |                          | CH300   |
| Information Literacy          | BIOL102                  | CH404   |
| Oral Communication            |                          | CH401   |
| 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.