MEMORANDUM OF UNDERSTANDING
HARFORD COMMUNITY COLLEGE & TOWSON UNIVERSITY

June 18, 2012

MB3: Biochemistry Track B.S. Degree

Harford Community College in Bel Air, Maryland, and Towson University, agree to follow the articulation of courses outlined in the articulation (course equivalency) document, for completion of requirements for the Bachelor of Science degree in MB3: Biochemistry Track (Attachment A), which is attached to, and incorporated by reference into, this Memorandum of Understanding (MOU). The following principles guide the operation of this MOU, with the requirements for transfer in specific curricula set forth in Attachment A.

1. Towson University will accept a maximum number of 64 credits from Harford Community College as outlined in the Attachment A. The number of transferable credits specific to this program is reflected in Attachment A.

2. Students who have completed the Associate of Science Degree in the Chemistry program at Harford Community College may transfer into Towson University’s MB3 program with junior standing provided that the student has completed all courses identified on Attachment A (which is attached to, and incorporated by reference into, this MOU) with a cumulative GPA of 2.00 or higher. Courses completed at Harford Community College with 300 or 400 level Towson University course equivalencies will transfer as lower-level credit but will satisfy course content provided that the student validates the course with a higher level course for which the transferred course is a prerequisite.

3. Only courses in which a grade of C (2.00) or better is earned will apply toward the major at Towson University.

4. In accordance with the MHEC transfer policy pertaining to general education requirements, Towson University will accept the completion of Harford Community College general education requirements (GenEds) and students will be required to complete courses at Towson University to satisfy the remaining University Core Curriculum requirements as shown in Attachment A.

5. Towson University recognizes college-level experiential learning gained through previous work, military and/or volunteer service or life experience. Credit for prior learning may also be established through course challenge or standardized credit by examination.

6. Harford Community College students transferring to Towson University will be given every consideration for financial aid and will be eligible to compete for academic scholarships upon entrance to Towson University subject to stated scholarship deadlines.

7. Both Harford Community College and Towson University agree to work together to facilitate the transfer of students from Harford Community College to Towson University
to work cooperatively to insure the high quality of the programs at the respective institutions. Transfer of students will be in accordance with policies and procedures of both institutions, as they may be amended from time to time.

8. This MOU will be in effect initially for ten years, beginning fall 2011 with a review every two years by both parties. Any revisions the parties deem necessary must be evidenced in writing and signed by the authorized officials of each institution. The MOU may be terminated by either party for due cause and after adequate notice of not less than six months is given to the other party.

9. Towson University will establish procedures to provide information on the academic progress of Harford Community College students enrolled as part of this MOU.

10. This MOU, when signed, constitutes the entire agreement between the parties and supersedes all prior agreements and understandings between the parties respecting the matter hereof.

HARFORD COMMUNITY COLLEGE AND TOWSON UNIVERSITY

Dr. M. Annette Haggray  
Vice President for Academic Affairs  
Date 6/21/12

Ms. Deborah Wrobel  
Dean, Science, Technology, Engineering & Mathematics  
Date June 21, 2012

Dr. James E. Dilisio  
Interim Provost and Vice-President for Academic Affairs  
Date 6/29/12

Dr. David A. Vanko  
Dean, The Jess & Mildred Fisher College of Science & Mathematics  
Date 27 June 12
<table>
<thead>
<tr>
<th>COURSE #</th>
<th>COURSE TITLE</th>
<th>CRS.</th>
<th>HCC EQUIVALENCY</th>
<th>TU EQUIVALENCY</th>
<th>CORE</th>
<th>COMMENTS</th>
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<tr>
<td>ENG 101</td>
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<td>ENGL 102</td>
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<td>MATH 109</td>
<td>Precalculus Mathematics</td>
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<td>MATH 119</td>
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<td>English Composition</td>
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<td>CIS 102</td>
<td>Intro. Information Sciences</td>
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<td>CIS 115***</td>
<td>3.</td>
<td>Mathematics</td>
<td>1184***</td>
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<td>**GH</td>
<td>Arts &amp; Humanities (GH)</td>
<td>3</td>
<td>Depends on choice.</td>
<td>4.</td>
<td>Creativity &amp; Creative Development</td>
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<td>**GB</td>
<td>GenEd - Behavioral/Social Science (GB)</td>
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<td>Depends on choice.</td>
<td>6.</td>
<td>Social &amp; Behavioral Sciences</td>
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<tr>
<td>CHEM 111</td>
<td>General Chemistry I</td>
<td>4</td>
<td>CHEM 110 OR CHEM 131 AND CHEM 131</td>
<td>7.</td>
<td>Biological &amp; Physical Science w/Lab</td>
<td>1041, 13097, 13098</td>
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<td>CHEM 112</td>
<td>General Chemistry II A</td>
<td>4</td>
<td>CHEM 111 OR CHEM 132 AND CHEM 132</td>
<td>8.</td>
<td>Biological &amp; Physical Science</td>
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<td>**GB</td>
<td>GenEd - Behavioral/Social Science (GB)</td>
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<td>9.</td>
<td>Advanced Writing Seminar</td>
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<td>GB, GH, or GI</td>
<td>HCC General Education Elective (GB)(GH)(GI)</td>
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<td>Depends on choice.</td>
<td>10.</td>
<td>Metropolitan Perspectives</td>
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<tr>
<td>ENG 109</td>
<td>Research Writing</td>
<td>3</td>
<td>ENGL 152***</td>
<td>11.</td>
<td>The United States as a Nation</td>
<td>2352***</td>
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<td>**GH</td>
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<td>Global Perspectives</td>
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Total CORE in Transfer: 36

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<th>COURSE #</th>
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<th>TU EQUIVALENCY</th>
<th>CORE</th>
<th>COMMENTS</th>
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<td>MATH 203</td>
<td>Calculus I (must be completed at HCC)</td>
<td>4</td>
<td>MATH 273</td>
<td>13.</td>
<td>Ethical Issues &amp; Perspectives</td>
<td>4407</td>
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<td>MATH 204</td>
<td>Calculus II or Introduction to Statistics (GM)</td>
<td>4</td>
<td>MATH 274 Or MATH 231</td>
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<td>Introductory Physics I</td>
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<td>Introductory Physics II</td>
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<td>CHEM 207</td>
<td>Organic Chemistry I</td>
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<td>PHEA TLL</td>
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Program Requirements at Harford: 30

Total Harford Program Requirements: 66

Total Credits in Transfer: 64

** Harford Community College students must complete one 3 credit diversity course which appears on the "Approved List" in the HCC catalog.

*** Requires Course Directive for Core placement.

64 credit transfer maximum. 9. Core Curriculum units to be completed at Towson: 1, 9 and 14.
- If PHYS 203/204 is substituted for PHYS 101/102 at Harford Community College, MATH 203 and 204 must also be completed at HCC.
HARFORD COMMUNITY COLLEGE - CHEMISTRY A.S. DEGREE
TOWSON UNIVERSITY/ MB3 - BIOCHEMISTRY TRACK B.S. DEGREE

Major Requirements to be completed at Towson (33 Units)

BIOL 309  Genetics  (4)
BIOL 409  Molecular Biology  (4)
CHEM 210  Analytical Chemistry  (5)
CHEM 345  Principles of Physical Chemistry  (3)
CHEM 351  Intro Biochemistry  (3)
CHEM 356  Biochemistry Lab  (2)
CHEM 357  Biochemistry II  (3)
CHEM 372  Intermediate Laboratory I  (1)
MBBB 301  Intro to Bioinformatics  (4)
MBBB 493  Seminar in Bioethics  (1)

Complete a minimum of 3 units from the following:

BIOL 491  Elective in Independent Research
BIOL 492  Independent Research
CHEM 491  Independent Research in Chemistry  (3)
COSC 495  Independent Study in Computer Science
ELECTIVE  Approved Upper-level elective

Total Credits to B.S. Degree (120)

Harford Chemistry A.S. Degree  64
Completion of Core at TU  9
Completion of Major Requirements  33
General Electives at TU  10
Upper level Electives  4