

MEMORANDUM OF UNDERSTANDING
HARFORD COMMUNITY COLLEGE & TOWSON UNIVERSITY
April 26, 2018

**Molecular Biology, Biochemistry, and Bioinformatics (MB3) - Biochemistry Concentration
B.S. Degree**

Harford Community College, 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 Molecular Biology, Biochemistry, and Bioinformatics (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 (requiring calculus-based physics) program at Harford Community College may transfer into Towson University's Molecular Biology, Biochemistry, and Bioinformatics: Biochemistry concentration 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 as indicated.
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's general education requirements (GenEds) and students will be required to complete courses at Towson University to satisfy the remaining *University Core* 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.

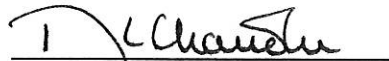
7. Both Harford Community College and Towson University agree to work together to facilitate the transfer of students from Harford Community College to Towson University to work cooperatively to insure the high quality of the programs at the respective institutions. Transfer of students will be in accordance 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 *spring 2018*, 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. Steven Thomas
Vice President for
Academic Affairs

Date 5.18.2018



Dr. Timothy Chandler
Provost and Executive Vice-President for
Academic Affairs

Date 6/1/18

HARFORD COMMUNITY COLLEGE – CHEMISTRY (Requiring Calculus-based Physics) A.S. DEGREE
TOWSON UNIVERSITY / Molecular Biology, Biochemistry and Bioinformatics (MB3) – BIOCHEMISTRY CONCENTRATION B.S. DEGREE

HARFORD COMMUNITY COLLEGE				TOWSON UNIVERSITY			
COURSE #	COURSE TITLE	CRS.	TU EQUIVALENCY	CORE	COMMENTS	COURSE ID#	
ENG 101	English Composition (GE) (Grade of C or better)	3	TSEM 102 WAIVED ENGL 102	1.	Towson Seminar English Composition	2348	
MATH 203	Calculus I (GM)	4	MATH 273	2. 3.	Mathematics	4407	
GH	Arts & Humanities (GH)	3	Depends on choice.	4. 5.	Creativity & Creative Development		
GB	Behavioral/Social Science (GB)	3	Depends on choice.	6.	Social & Behavioral Sciences		
CHEM 111	General Chemistry I (GL)	4	CHEM 131/131L	7.	Biological & Physical Science w/Lab	13097/13098	
CHEM 112	General Chemistry II A (GL)	4	CHEM 132/132L	8.	Biological & Physical Science	13099/13100	
				9.	Advanced Writing Seminar		
GB*	Behavioral & Social Science (GB)	3	Depends on choice.	10.	Metropolitan Perspectives		
GH*	Arts & Humanities (GH)	3	Depends on choice.	11. 12.	The United States as a Nation Global Perspectives		
				13.	Diversity & Difference		
				14.	Ethical Issues & Perspectives		
Total CORE in Transfer		27					
MATH 204	Calculus II (GM)	4	MATH 274			4408	
PHYS 200/203 **	Gen Phys: Mechanics & Particle Dynamics w/LAB (GL/GS)	4	PHYS 241			6805	
PHYS 204	Gen Phys: Vibrations, Waves, Heat, Electricity & Magnetism (GL)	4	PHYS 242			6806	
CHEM 207	Organic Chemistry I	4	CHEM T31 (331)		Transfers as lower level credit.	10134	
CHEM 208	Organic Chemistry II	4	CHEM T32 (332)		Transfers as lower level credit.	10135	
BIO 120****	General Biology I (GL)	4	BIOL 200/200L			13759/13760	
BIO 208****	Genetics	4	BIOL T09 (309)		Transfers as lower level credit	11379	
CHEM 204	Analytical Chemistry	4	CHEM 210			1049	
PHYS ED ELECT	Physical Education Elective	1	PHEA TLL			10564	
Program Requirements at Harford		33					
Total Harford Program Requirements		60					
Maximum Credits in Transfer		64					

64 Credit Maximum. 15 Core Curriculum units must be completed at Towson University; 4. Creativity; 9. Advanced Writing Seminar; 10. Metropolitan Perspectives; 12. Global Perspectives; 14. Ethical Issues

*One GB or GH course must also satisfy Diversity requirement at HCC.

**Students must take PHYS 200 with PHYS 203 to receive equivalency of PHYS 241 to satisfy concentration requirement at TU.

***Students should choose BIO 120; BIO 208, PHYS 200 and CHEM 204 as program electives at HCC to satisfy required courses for the MB3 major and Biochemistry concentration at TU.

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CORE REQUIREMENTS TO BE COMPLETED AT TOWSON 15 UNITS

CORE 4:	Creativity and Creative Development	(3 UNITS)
CORE 9:	Advanced Writing Seminar	(3 UNITS)
CORE 10:	Metropolitan Studies	(3 UNITS)
CORE 12:	Global Perspectives	(3 UNITS)
CORE 14:	Ethical Issues and Perspectives	(3 UNITS)

PROGRAM REQUIREMENTS TO BE COMPLETED AT TOWSON 33-46 UNITS

REQUIRED COURSES: 23-31 UNITS

BIOL 409	MOLECULAR BIOLOGY	(4 UNITS)
CHEM 351	BIOCHEMISTRY I	(3 UNITS)
MATH 237	ELEMENTARY BIOSTATISTICS	(4 UNITS)
MBBB201	PROGRAMMING FOR BIOLOGISTS OR	(4 UNITS)
COSC 175	GEN COMPUTER SCIENCE	(4 UNITS)
MBBB 301	INTRO TO BIOINFORMATICS	(4 UNITS)
MBBB 493	SEMINAR IN BIOETHICS	(1 UNIT)

BIOL200 & INTRODUCTION TO CELL BIOLOGY AND GENETICS
BIOL 200L INTRODUCTION TO CELL BIOLOGY AND GENETICS LAB

(If BIOL 120 was not taken at HCC as a program elective)

BIOL 309 GENETICS (4 UNITS)

(If BIOL 208 was not taken at HCC as a program elective)

SELECT ONE OF THE FOLLOWING:

MBBB 495 CAPSTONE PROJECT* (3 UNITS)

BIOL 491 ELECTIVE IN INDEPENDENT RESEARCH *

CHEM 491 INTRODUCTION TO RESEARCH IN CHEMISTRY I*

COSC 495 INDEPENDENT STUDY*

***COURSES MAY BE REPEATED FOR A TOTAL OF 6 UNITS TOWARD THE MAJOR**

COURSES FOR BIOCHEMISTRY CONCENTRATION: 10-15 UNITS

CHEM 210	ANALYTICAL CHEMISTRY	(5 UNITS)
<i>If CHEM 204 was not taken at HCC as a program elective)</i>		
CHEM 345	PRINCIPLES PHYSICAL CHEMISTRY	(3 UNITS)
CHEM 356	BIOCHEMISTRY LAB	(2 UNITS)
CHEM 357	BIOCHEMISTRY II OR	(3 UNITS)
BIOL/CHEM 450	ECOLOGICAL BIOCHEMISTRY	(3 UNITS)
CHEM 372	PHYSICAL CHEMISTRY LABORATORY	(2 UNITS)

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Additional Bachelor Degree Requirements

- A C (2.0) or higher is required in all major and minor courses
- A cumulative grade point average (GPA) of 2.0 is required
- 32 units of the bachelor's degree must be completed at the upper level (courses numbered 300 or above)

Total Credits to B.S. Degree	(120-121)
Harford Biology A.S. Degree	60
Completion of Core at TU	15
Completion of Major Requirements at TU	33-46
Elective Credits at TU	0-12