

**MEMORANDUM OF UNDERSTANDING**  
**HARFORD COMMUNITY COLLEGE & TOWSON UNIVERSITY**  
**November 29, 2018**

**FORENSIC CHEMISTRY B.S. Degree**

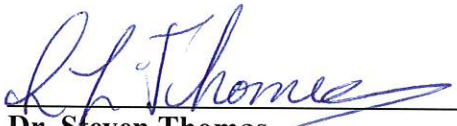
Harford Community College, Bel Air, Maryland, and Towson University, agree to follow the articulation of courses outlined in the articulation (course equivalency) document, for completion of requirements for the Bachelor of Science degree in Forensic Chemistry (Attachment A), which is attached to, and 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 Chemistry (with non-Calculus based physics) program at Harford Community College may transfer into Towson University's Forensic Chemistry 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 *fall 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 12, 17, 2018



**Dr. David Vanko**  
Interim Provost and Executive Vice-President  
of Academic Affairs

Date 11 Jan 19

**HARFORD COMMUNITY COLLEGE – CHEMISTRY (WITH NON-CALCULUS BASED PHYSICS), ARTS & SCIENCES A.S. DEGREE  
TOWSON UNIVERSITY/ FORENSIC CHEMISTRY B.S. DEGREE**

HARFORD COMMUNITY COLLEGE			TOWSON UNIVERSITY		
COURSE #	COURSE TITLE	CRS	TU EQUIVALENCY	COMMENTS	COURSE ID#
<b>General Education Applied to Core</b>			<i>TSEM 102 (waived)</i>	<i>Towson Seminar Waived</i>	<i>13192</i>
ENG 101	English Composition (GE)	3	ENGL 102		2348
MATH 109	Precalculus Mathematics (GM)	4	MATH 119		4381
GH Elective	Arts/Humanities Elective (GH)**	3	Depends on choice.		
GH Elective	Arts/Humanities Elective (GH)**	3	Depends on choice.		
GB Elective	Behavioral/Social Science Elective (GB)**	3	Depends on choice.		
GB Elective	Behavioral/Social Science Elective (GB)**	3	Depends on choice.		
CHEM 111*	General Chemistry I (GL)	4	CHEM 131 & 131L	Satisfies TU major requirement	13097 & 13098
CHEM 112*	General Chemistry II (GL)	4	CHEM 132 & 132L	Satisfies TU major requirement	13099 & 13100
MATH 203*	Calculus I (GM)	4	MATH 273	Satisfies TU major requirement (Ancillary Course).	4407
PHYS 101*	Introductory Physics I (GL)	4	PHYS 211	Satisfies TU major requirement (Ancillary Course).	6800
PHYS 102*	Introductory Physics II (GL)	4	PHYS 212	Satisfies TU major requirement (Ancillary Course).	6801
<b>Units Applied to TU Core</b>		<b>39</b>			
<b>Program Requirements/Electives</b>					
CHEM 207*	Organic Chemistry I	4	CHEM T31	Lower-level equivalent of CHEM 331. Satisfies TU major requirement (Required Courses – All Tracks).	10134
CHEM 208*	Organic Chemistry II	4	CHEM T32	Lower-level equivalent of CHEM 332. Satisfies TU major requirement (Required Courses – All Tracks).	10135
MATH 204 <i>or</i> MATH 216	Calculus II (GM) <i>or</i> Intro to Statistics (GM)	4	MATH 274 <i>or</i> MATH 231		4408 4393
BIO 120*	General Biology I (GL) [Program Elective]	4	BIOL 200 & 200L	Satisfies TU major requirement (Ancillary Course).	
CHEM 204*	Analytical Chemistry [Program Elective – <i>general elective</i> ]	4	CHEM 210	Satisfies TU major requirement (Required Courses – All Tracks).	1049
PE	Physical Education Elective	1	Depends on choice.		
<b>Program Requirements at Harford CC</b>		<b>21</b>			
<b>Total Degree Requirements at Harford CC</b>		<b>60</b>			
<b>Maximum Units in Transfer</b>		<b>64</b>		<b>Core Package 4: AACR 400</b>	

\*Course satisfies program requirement for both Associate's degree and Bachelor's degree. Refer to next page for details on course selection and degree requirement satisfaction.

\*\*One Arts/Humanities (GH) or Social/Behavioral Science (GB) must be a Diversity course (D).

A grade of "C" or higher is required for all program requirements at HCC.

Note: Students may choose to take additional electives within the 64 allowable transfer credits to satisfy prerequisites for major electives at TU. This is not required; see next page for details.

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**Harford CC Course Selection:**

**GENERAL EDUCATION:**

1. Students should use one of their **Arts/Humanities (GH) or Social/Behavioral Science (GB) general education electives** to satisfy the 3-credit **diversity course (D)** requirement for Harford CC's graduation requirements.

**PROGRAM ELECTIVE (8 CREDITS):**

1. Students should choose **BIO 120 General Biology I** as a program elective in order to satisfy a required ancillary course in the major at TU and prerequisite for required courses in the major. Students who do not complete BIO 120 at HCC will be required to complete BIOL 200 and BIOL 200L at TU. **NOTE:** Depending on the track they choose to pursue, students may be required to complete this in their first semester at TU before enrolling in upper-level biology courses in the major.
2. The A.S. degree in Chemistry allows for 1-4 credits of *general electives* to satisfy one of the **program electives**. Students should complete **CHEM 204 Analytical Chemistry** as this *general elective (program elective)*. A course substitution appeal may be required at HCC to take this course. Students should consult with their academic advisors before registering for this course. Students who do not complete CHEM 204 at HCC will be required to complete CHEM 210 at TU. **NOTE:** If CHEM 204 is not offered at HCC during a student's attendance, refer to the note below for alternative course recommendations.

**NOTE:** The following courses may be substituted for CHEM 204 Analytical Chemistry or may be taken by students who wish to complete additional credits within the allowable 64 transfer credits\*:

- a. **CJ 101 Introduction to Criminal Justice** to satisfy a required ancillary course in the major at TU and prerequisites for other ancillary courses. A course substitution appeal may be required at HCC to take this course if it will be used to satisfy a program elective. Students should consult with their academic advisors before registering for this course. Students who do not complete CJUS 101 at HCC will be required to complete CRMJ 254 at TU and should plan to complete this requirement in their first term of transfer to ensure that prerequisites are satisfied for other ancillary courses for which they will subsequently register.
- b. **BIO 208 Genetics** to satisfy the BIOL 309 requirement in the General Science or DNA tracks. This course would transfer as a lower-level equivalent of BIOL 309 and would not count toward the upper-level credit requirement for the bachelor's degree at TU.

\*These are only suggestions for students looking to complete additional program requirements while at HCC. HCC and TU do not require students to complete more than the required 60 credits for the AS degree. However, completion of an additional major or prerequisite course at HCC may reduce the total number of units to be completed at TU.

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**DEGREE REQUIREMENTS TO BE COMPLETED AT TU:**

**CORE CURRICULUM TO BE COMPLETED AT TU**

<b>Core 9</b>	<b>Advanced Writing Seminar (CHEM 301)</b>	<b>3 units</b>
		3 units

**REQUIRED COURSES FOR ALL FORENSIC CHEMISTRY TRACKS**

**12-17 units**

CHEM 210	Analytical Chemistry <i>(If CHEM 204 is not taken at HCC)</i>	(5 units)
CHEM 301	Professional Ethics for Scientists <i>(counted above)</i>	(3 units)
CHEM 351	Biochemistry I	3 units
FRSC 367	Forensic Chemistry	3 units
FRSC 368	Professional Practices in Forensic Science	3 units
FRSC 440	Forensic Science, Emergency Medicine, and Death Analysis	3 units

**Core 9 Advanced Writing Seminar**

**ANCILLARY COURSES (REQUIRED OF ALL FORENSIC CHEMISTRY TRACKS)**

**13-20 units**

ANTH 357	Introduction to Forensic Crime Analysis	3 units
ANTH 457	Advanced Forensic Investigation	3 units
BIOL 200	Introduction to Cellular Biology and Genetics [Lecture] <i>(If BIO 120 is not taken at HCC)</i>	(3 units)
BIOL 200L	Introduction to Cellular Biology and Genetics [Lab] <i>(If BIO 120 is not taken at HCC)</i>	(1 unit)
CRMJ 254	Introduction to Criminal Justice <i>(If CRJU 101 is not taken at HCC)</i>	(3 units)
CRMJ 384	Advanced Criminal Law	3 units
MATH 237	Elementary Biostatistics	4 units

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**TRACK\* (Choose one):**

<b><i>General Science Track</i></b>		<b><i>17-21 units</i></b>
BIOL 309	Genetics <i>(if BIO 208 is not taken at HCC)</i>	(4 units)
BIOL 409	Molecular Biology	4 units
CHEM 310	Instrumental Analysis	4 units
CHEM 345	Principles of Physical Chemistry	3 units
FRSC 363	Chemistry of Dangerous Drugs	3 units
FRSC 467	Forensic Analytical Chemistry	3 units
<b><i>Trace Evidence/Drug Analysis Track</i></b>		<b><i>18 units</i></b>
CHEM 310	Instrumental Analysis	4 units
CHEM 345	Principles of Physical Chemistry	3 units
CHEM 372	Physical Chemistry Laboratory	2 units
CHEM 480	Chemical Toxicology	3 units
FRSC 363	Chemistry of Dangerous Drugs	3 units
FRSC 467	Forensic Analytical Chemistry	3 units
<b><i>DNA Track</i></b>		<b><i>16-20 units</i></b>
BIOL 309	Genetics <i>(if BIO 208 is not taken at HCC)</i>	(4 units)
BIOL 409	Molecular Biology	4 units
BIOL 410	Molecular Biology Laboratory	2 units
CHEM 356	Biochemistry Lab	2 units
MBBB 301	Intro to Bioinformatics	4 units
FRSC 420	Body Fluid Analysis	4 units

*\*These tracks provide the student with options to prepare for the specialized areas of forensic science in the professional work force or for graduate programs. Students should consult the TU catalog and the Forensic Chemistry department for guidance on selecting a track. Total credits required and time to degree completion may be affected by a student's choice of track within the FCHM major (see next page).*

**CHEMISTRY MAJOR REPEAT POLICY:** A student may repeat no more than three courses, including multiple attempts at the same course, required for the Chemistry major or minor. This includes all foundation courses, as well as required courses and electives for the major and minor. Students exceeding this limit may not be permitted to register for additional Chemistry courses.

**NOTE:** This policy applies to TU coursework only. Students will not be penalized for repeating major courses prior to attending TU; they should refer to the Harford CC catalog for its repeat policy.

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**TOTAL UNITS TO B.S. DEGREE 120-122 UNITS\***

**General Science Track 122 UNITS**

Harford CC Chemistry (w/ Non Calculus Based Physics) A.S. Degree	60
Completion of Core Curriculum at TU	3
Forensic Chemistry Major Requirements at TU	42-58
General Electives	0-15

**Trace Evidence/Drug Analysis Track 120 UNITS**

Harford CC Chemistry (w/ Non Calculus Based Physics) A.S. Degree	60
Completion of Core Curriculum at TU	3
Forensic Chemistry Major Requirements at TU	43-55
General Electives	2-14

**DNA Track 121 UNITS**

Harford CC Chemistry (w/ Non Calculus Based Physics) A.S. Degree	60
Completion of Core Curriculum at TU	3
Forensic Chemistry Major Requirements at TU	41-57
General Electives	0-16

*\*This program is designed to be completed in 120 credits, depending on the track chosen by the student. Students who do not take courses at HCC as outlined in this document may require additional credits depending on their course selections.*

**ADDITIONAL BACHELOR'S DEGREE REQUIREMENTS:**

- A C (2.0) or higher is required in all major 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).