

MEMORANDUM OF UNDERSTANDING
CARROLL COMMUNITY COLLEGE & TOWSON UNIVERSITY
April 19, 2019

CHEMISTRY, Professional Track B.S. Degree

Carroll Community College, Westminster, 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 Chemistry – Professional 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 Carroll 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 Physical Science, Chemistry concentration program at Carroll Community College may transfer into Towson University's Chemistry – Professional track 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 Carroll 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 Carroll 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. Carroll 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 Carroll Community College and Towson University agree to work together to facilitate the transfer of students from Carroll 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 2019*, 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 Carroll 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.

CARROLL COMMUNITY COLLEGE AND TOWSON UNIVERSITY

Dr. Rosalie Mince
Vice President of
Academic and Student Affairs

Date _____

Dr. Melanie Perreault
Provost and Executive Vice-President
for **Academic Affairs**

Date _____

CARROLL COMMUNITY COLLEGE – PHYSICAL SCIENCE, CHEMISTRY CONCENTRATION A.S. DEGREE
TOWSON UNIVERSITY – CHEMISTRY, PROFESSIONAL TRACK B.S. DEGREE

CARROLL COMMUNITY COLLEGE			TOWSON UNIVERSITY (TU)		
COURSE #	COURSE TITLE	CRS.	TU EQUIVALENCY	COMMENTS	COURSE ID#
General Education Applied to CORE					
				<i>Towson Seminar Waived</i>	13192
ENGL 101	College Writing (<i>Composition</i>)	3	ENGL 102		2348
MATH 135	Calculus of a Single Variable 1 (<i>Mathematics</i>)	4	MATH 273	Satisfies major requirement.	4407
AH	Arts and Humanities Gen Ed	3	Varies by choice.		
AH	Arts and Humanities Gen Ed	3	Varies by choice.		
SB	Social and Behavioral Science Gen Ed	3	Varies by choice.		
SB	Social and Behavioral Science Gen Ed	3	Varies by choice.		
CHEM 105	Principles of General Chemistry I (<i>Biological & Physical Sciences</i>)	4	CHEM 131 & 131L	Satisfies major requirement.	13097 & 13098
PHYS 111	Physics 1 for Science and Engineers (<i>Biological & Physical Sciences</i>)	4	PHYS 241	Satisfies major requirement.	6805
ENGL 102	Writing About Literature (<i>Literature</i>)	3	ENGL TLL		10267
BIOL 101	Fundamentals of Biology I (<i>Program Requirement</i>)	4	BIOL 200 & 200L		13759 & 13760
Units Applied to TU Core		34			
Program Requirements/Electives					
CHEM 106	General Chemistry 1	4	CHEM 132 & 132L	Satisfies major requirement.	13099 & 13100
MATH 136	Calculus of a Single Variable 2	4	MATH 274	Satisfies major requirement.	4408
CHEM 201	Organic Chemistry I	5	CHEM T31	Satisfies major requirement.	10134
CHEM 202	Organic Chemistry II	5	CHEM T32	Satisfies major requirement.	10135
PHYS 212	Physics 2 for Science and Engineers	4	PHYS 242	Satisfies major requirement.	6806
Elective	General Elective	4	Varies by choice.		
Program Requirements Applied		26	Core Transfer Package: CORE Package 3		
Total Units Completed at Carroll CC		60			
Maximum Units in Transfer		64			

About This Degree: The Professional track is designed to meet the requirements for American Chemical Society (ACS) certification. Students must take PHYS 111 & PHYS 212 because ACS certification requires two semesters of calculus-based physics. Additional information regarding ACS certification is available in the TU catalog.

Please see page 2 of this document for important information regarding general education course selection and degree planning.

CARROLL COMMUNITY COLLEGE – PHYSICAL SCIENCE, CHEMISTRY CONCENTRATION A.S. DEGREE
TOWSON UNIVERSITY – CHEMISTRY, PROFESSIONAL TRACK B.S. DEGREE

Carroll CC Degree Completion Information

Please note the following information regarding general education requirements:

1. Degree requirements without a specified course can be satisfied by a course of the student's choosing. Students who need to complete the prerequisite for MATH 135 at the start of their program may apply this course to the general elective.
2. A core package will be granted to recognize the completion of a general education program at the community college without further review. The Carroll CC degree requires 30 credits of general education credits, and TU will also recognize the program requirement of BIOL 101 as a general education course in order to grant students a Core Package 3. Students must only complete two additional Core Curriculum requirements within the bachelor's degree: Core 9 Advanced Writing Seminar and Core 14 Ethical Perspectives. If students choose to complete an ethics course as part of their general education courses at Carroll CC, then they may receive a different core package and be required to complete an alternative Core requirement.

Please note the following information regarding program requirements and degree completion planning:

1. The courses CHEM 201 Organic Chemistry 1 and CHEM 202 Organic Chemistry 2 will transfer as CHEM T31 and CHEM T32. These equivalencies represent lower-level credit for the courses CHEM 331 and CHEM 332. The credit for CHEM T31 and T32 will satisfy the major's requirement for CHEM 331 & 332, but they will not count toward the university's degree requirement of 32 upper-level units.
2. The 4-credit general elective may be completed by any course a student chooses. However, if students must complete precalculus prior to enrolling in MATH 135, then the credit for either MATH 123 & 124 or MATH 130 can count toward the elective credit.
3. Certain courses at Carroll CC may only be offered once a year in the spring or fall term. Students should consult the Carroll CC catalog for a recommended course sequence.

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DEGREE REQUIREMENTS TO BE COMPLETED AT TU:

CORE CURRICULUM REQUIREMENTS:		6 units
Core 9	Advanced Writing Seminar	3 units
Core 14	Ethical Perspectives	3 units
REQUIRED CHEMISTRY COURSES		27 units
CHEM 210	Analytical Chemistry	5 units
CHEM 310	Instrumental Analysis	4 units
CHEM 323	Inorganic Chemistry	4 units
CHEM 345	Principles of Physical Chemistry	3 units
CHEM 346	Theoretical Foundations of Physical Chemistry	3 units
CHEM 351	Biochemistry I	3 units
CHEM 372	Physical Chemistry Laboratory	2 units
CHEM 401	Communication Skills in Chemistry	1 unit
CHEM 491	Research in Chemistry	2 units

MAJOR ELECTIVES **6 units**

Students must complete a minimum of two additional courses (6 units) from a list of approved electives. At least one elective must be taken in the CHEM or FRSC subject. Students should refer to the TU Catalog for a current list of electives. Some electives may have prerequisites outside of the Chemistry major.

Note: Not all advanced chemistry courses are offered every term. A long-term schedule for these courses may be obtained from the Department of Chemistry. Advanced chemistry electives are offered periodically, subject to adequate enrollment.

GENERAL ELECTIVES **21 units**

Students can take additional major electives or courses to explore personal interests. Another option is to add a minor, which usually requires 18-21 units.

ADDITIONAL BACHELOR'S DEGREE REQUIREMENTS:

- A C (2.0) or higher is required in all major courses and prerequisites
- 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)

CHEMISTRY MAJOR REPEAT POLICY: This policy applies to TU coursework only. 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.

TOTAL UNITS TO B.S. DEGREE:	120 UNITS
Carroll CC Physical Science, Chemistry Concentration A.S. Degree	60
Completion of Core Curriculum at TU	6
TU Chemistry Major with Professional Track	33
General Electives	21