

**HARFORD COMMUNITY COLLEGE – ENVIRONMENTAL SCIENCE – OPTION IN ARTS & SCIENCES A.S. DEGREE
TOWSON UNIVERSITY/ GEOLOGY B.S. DEGREE**

HARFORD COMMUNITY COLLEGE			TOWSON UNIVERSITY			
COURSE #	COURSE TITLE	CRS	TU EQUIVALENCY	CORE	COMMENTS	COURSE ID
	WAIVED		TSEM (waived)	1.	Towson Seminar	13192
ENG 101	ENGLISH COMPOSITION (GE) (grade of C or better)	3	ENGL 102	2.	English Composition	2348
MATH 109 OR MATH 203 *	PRECALCULUS MATHEMATICS (GM) CALCULUS I (GM)	4	MATH 119 MATH 273	3.	Mathematics	4381 4407
ENV 111	HUMAN ECOLOGY (GS)	3	BIOL TLL	4.	Creativity & Creative Development	10117****
GH**	ARTS & HUMANITIES (GH)	3	Depends on Choice	5.	Arts & Humanities	
GEOG 101	PHYSICAL GEOGRAPHY (GB)	3	GEOG 101	6.	Social & Behavioral Sciences	2885****
CHEM 111	GENERAL CHEMISTRY I (GL)	4	CHEM 131/L	7.	Biological & Physical Science w/Lab	13097/13098
BIO 120	GENERAL BIOLOGY I (GL)	4	BIOL 201	8.	Biological & Physical Science	666
				9.	Advanced Writing Seminar	
GB**	BEHAVIORAL/SOCIAL SCI ELECT (GB)	3	Depends on Choice	10.	Metropolitan Perspectives	
GB**	BEHAVIORAL/SOCIAL SCI ELECT (GB)	3	Depends on Choice	11.	The United States as a Nation	
				12.	Global Perspectives	
GH**	ARTS & HUMANITIES (GH)	3	Depends on Choice	13.	Diversity & Difference	
				14.	Ethical Issues & Perspectives	
Total CORE in Transfer		33				
BIO 121	GENERAL BIOLOGY II	4	BIOL 202			667
PHYS 101 OR PHYS 203 and PHYS 200	INTRODUCTORY PHYSICS I GEN PHYS: MECHANICS & PARTICLE DYNAMICS (GS) and GENERAL PHYSICS I LAB	4	PHYS 211 PHYS 241		Satisfies required course for major at TU. Satisfies required course for major at TU. Both PHYS 203 and 200 are required to receive credit for PHYS 241 and to satisfy major requirement at TU.	6800 6805
ES 105 and ES 106***	EARTH SCIENCE & LAB (Core Elective***)	4	GEOL 121		Satisfies required course for major at TU.	3086
CHEM 112****	GENERAL CHEMISTRY II (Core Elective ***)	4	CHEM 132/132L		Satisfies required course for major at TU.	13099/13100
PHYS 102 OR PHYS 204 ***	INTRODUCTORY PHYSICS II (Core Elective***) GEN PHYS: VIBRATIONS, WAVES, HEAT, ELECTRICITY & MAGNETISM (Core Elective***)	4	PHYS 212 PHYS 242		Satisfies required course for major at TU. Satisfies required course for major at TU.	6801 6806
ENV 122***	INTR TO SOIL SCIENCE (Core Elective***)	3	GEOG T19 (319)		Satisfies elective course for major at TU; transfers as lower level credit	11706
ELECTIVE*	PROGRAM CORE ELECTIVE	3-4	Depends on Choice			
PE ELECT	PHYSICAL EDUCATION ELECTIVE	1	Depends on Choice			
Program Requirements at HCC		28				
Total Program Requirements at HCC		60-61				
Maximum Credits in Transfer		64				

64 credit transfer maximum. 9 Core Curriculum units needed at Towson University: 9. Advanced Writing Seminar 12. Global Perspectives and 14. Ethical Issues and Perspectives.

*Calculus is required for major at TU. Students who require MATH 109 (Pre-Calculus) should take MATH 203 (Calculus) as a program core elective at HCC. Students who do not require pre-calculus are recommended to take ENV 220 (Principles of Environmental Analysis I) or GEOG 204 (Intro to Geographic Information Systems) as a program core elective at HCC to satisfy an additional program elective at TU.

**One General Education course must be a diversity course (D) at HCC.

***Students should take ES 105 and ES 106; CHEM 112; ENV 122 and PHYS 102 (or PHYS 204) as program core electives at HCC to satisfy required courses and a major elective at TU.

****Requires Course Directive for Core placement.

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CORE Requirements to be completed at Towson University (9 units):

Core 9:	Advanced Writing Seminar	3
Core 12:	Global Perspectives	3
Core 14:	Ethical Issues	3

Program Requirements to be completed at Towson University (35-54 units):

Required Geology Courses (26-31 units):

GEOL 123	Historical Geology	4
GEOL 305	Environmental Geology	4
GEOL 321	Structural Geology	4
GEOL 331	Mineralogy	4
GEOL 333	Petrology of Igneous and Metamorphic Rocks	4
GEOL 443	Sedimentology and Stratigraphy	4
GEOL 489	Introduction to Research	1
GEOL 495	Research Problems in Geology	1-2

GEOL121 Physical Geology 4

If student did not complete ES 105 & ES 106 as program core electives at HCC

Additional Required Courses (0-8 units):

PHYS 212 General Physics II 4

If student did not take PHYS 102 or PHYS 204 as program core elective at HCC

CHEM 132 General Chemistry II 3

CHEM 132L General Chemistry II Lab 1

If student did not take CHEM 112 as program core elective at HCC

Program Electives (9 -15 units)

Three additional courses are required. Students must choose from a list of electives (see current TU catalog). Two courses must be Geology courses (GEOL). Students who do not complete ENV 122 and either ENV 220 or GEOG 204 as electives at HCC may require upto five courses, of which two must be Geology courses (GEOL).

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TOTAL UNITS TO B.S. Degree	120-124
Harford A.S. Degree	60-61
Completion of Core Requirements at TU	9
Completion of Program Requirements at TU	35-54
Electives	0-16