

**HARFORD COMMUNITY COLLEGE- Biology A.S. Degree**  
**TOWSON UNIVERSITY- Biological Sciences B.S. Degree - Functional Biology of Animals Concentration**

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)		TSEM 102 (WAIVED)	1.	Towson Seminar	
MATH 109 OR MATH 203 *	Precalculus Mathematics (GM) OR Calculus I (GM)	3 4	ENGL 102 MATH 119 MATH 273	2. 3.	English Composition Mathematics	2348 4381 4407
GH	Arts & Humanities (GH)	3		4.	Creativity & Creative Development	
GB	Behavioral/Social Science (GB)	3	Depends on choice.	5.	Arts & Humanities	
CHEM 111	General Chemistry I (GL)	4	Depends on choice.	6.	Social & Behavioral Sciences	
CHEM 112	General Chemistry II A (GL)	4	CHEM 131/131L CHEM 132/132L	7. 8.	Biological & Physical Science w/Lab Biological & Physical Science	13097/13098 13099/13100
GB	Behavioral/Social Science (GB) **	3		9.	Advanced Writing Seminar	
GH	Arts & Humanities (GH) **	3		10.	Metropolitan Perspectives	
				11.	The United States as a Nation	
				12.	Global Perspectives	
				13.	Diversity & Difference	
				14.	Ethical Issues & Perspectives	
<b>Total CORE in Transfer</b>		<b>27</b>				
MATH 203 OR BIO ELECT *	Calculus I (GM) OR Biology Elective	3-4	MATH 273 Depends on choice.			4407
BIO 208	Genetics	4	BIOL T09 (309)		Transfers as lower level credit.	11379
BIO 120	General Biology I (GL)	4	BIOL 200/200L			13759/13760
BIO 121	General Biology II (GL)	4	BIOL 202			667
PHYS 101 OR PHYS200/203	Introductory Physics I (GL) OR Gen Phys: Mechanics & Particle Dynamics w/LAB (GL/GS)	4	PHYS 211 PHYS 241			6800 6805
PHYS 102 OR PHYS 204	Introductory Physics II (GL) OR Gen Phys: Vibrations, Waves, Heat, Electricity & Magnetism (GL)	4	PHYS 212 PHYS 242			6801 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
PHYS ED ELECT	Physical Education Elective	1	PHEA TLL			10564
ELECT *	Elective	0-1	Depends on choice.			
<b>Program Requirements at Harford</b>		<b>33</b>				
<b>Total Program Requirements at Harford</b>		<b>60</b>				
<b>Maximum Credits in Transfer</b>		<b>64</b>				

**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.**

\*See Course Selection Notes

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

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**\*Course Selection at HCC:**

Choosing your program electives will depend on whether you are calculus-ready when you enter the Biology Associate of Science program at HCC.

**Students who do NOT require pre-calculus** should take MATH 203 (Calculus I) 4 credits to satisfy the General Education math requirement and program requirement at HCC. MATH 203 will satisfy Core 3 and the program Math requirement at TU. Please note that students intending to take the calculus-based physics sequence (PHYS 200 & 204 at HCC or PHYS 241 & 242 at TU) must take MATH 203 and MATH 204.

Students who do not require pre-calculus will have 4 credits of program electives to take at HCC (depending on whether MATH 203 or MATH 212 was taken). The following options are suggested for satisfying the program elective:

- BIO 202 (Biodiversity). This course transfers as BIOL 208 and will satisfy a Breadth requirement for the major at TU. Students choosing BIO 202 may need to take additional elective credit to meet the required 60 credits for degree at HCC.
- BIO 107 (General Zoology) and BIO 110 (Introduction to Plant Sciences). These courses transfer to TU as BIOL 207 and BIOL 205 respectively and will satisfy a Breadth requirement for the major at TU. Please note that BOTH courses must be completed to satisfy the Breadth requirement. Students transferring with only BIO 107 or BIO 110 will need to complete either BIOL 205 or BIOL 207 at TU to satisfy the Breadth requirement. Students who take both courses at HCC will graduate with more than 60 credits, but will still be able to earn the baccalaureate degree in 120 credits. A maximum of 64 credits will be transferred to TU.

**Students who REQUIRE pre-calculus** should take MATH 109 (Pre-Calculus) to satisfy the General Education math requirement and MATH 203 (Calculus I) as the program elective at HCC. Calculus is required to complete the A.S. degree at HCC and will satisfy the Ancillary Math requirement of the major 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      22-33 UNITS**

**FOUNDATION COURSES:**

BIOL 204 EDUCATIONAL AND CAREER PLANNING FOR THE BIOLOGIST      **1 UNIT**

**BREADTH COURSES:**

- **SELECT ONE OF THE FOLLOWING:**  
*(if BIO202 or BIO107 and BIO 110 were not taken at HCC)*      **8-20 UNITS**  
 (0-8 UNITS)

BIOL 205 & GENERAL BOTANY AND  
 BIOL 207 GENERAL ZOOLOGY  
 OR  
 BIOL 208 BIODIVERSITY

- **SELECT ONE OF THE FOLLOWING:**  
 BIOL 405 MOLECULAR ECOLOGY, EVOLUTION & CONSERVATION      **(4 UNITS)**

BIOL 408 CELL BIOLOGY

BIOL409 MOLECULAR BIOLOGY

- **SELECT ONE OF THE FOLLOWING:**  
 BIOL 221/221L & HUMAN ANATOMY & PHYSIOLOGY I W/LAB AND  
 BIOL 222/222L HUMAN ANATOMY & PHYSIOLOGY II W/LAB      **(4-8 UNITS)**  
 OR

BIOL 325 ANIMAL PHYSIOLOGY

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**ELECTIVE COURSES:** 9-16 UNITS

- **ELECTIVE:** (4 UNITS)  
 BIOL 470      ADVANCED PHYSIOLOGY
- **FOCUSED ELECTIVE:** (2-8 UNITS)  
*If you chose the BIOL 221/222 sequence to satisfy the Breadth area, choose one course from the list below.*  
*If you chose BIOL 325 to satisfy the Breadth area, choose two courses from the list below.*

- BIOL 305      ELECTRON MICROSCOPY
- BIOL 315 OR      MEDICAL MICROBIOLOGY OR
- BIOL 318      MICROBIOLOGY
- BIOL 360      HISTOLOGY
- BIOL 367      ENDOCRINOLOGY
- BIOL 411      CANCER BIOLOGY
- BIOL 421      IMMUNOLOGY
- BIOL 427      NEUROMUSCULAR MECHANISMS OF THE UPPER BODY
- BIOL 428      VIROLOGY
- BIOL 463      DEVELOPMENTAL BIOLOGY
- CHEM 351      BIOCHEMISTRY I

- **FREE ELECTIVE:** (3-4 UNITS)  
**SELECT ONE BIOLOGY ELECTIVE FROM LISTS OF ELECTIVES IN ANY BIOLOGY CONCENTRATION OR SUCCESSFULLY COMPLETE BIOL 491 OR BIOL 499.**

**ANCILLARY COURSES: (COMPLETED AT HARFORD CC)      0 UNITS**

**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)**

Harford Biology A.S. Degree	60
Completion of Core at TU	15
Completion of Major Requirements at TU	22-33
Elective Credits at TU	12-23