

Biological Sciences: Physiology & Neurobiology PHNB (0404E) effective August 2016

A minimum of 120 credits earned and a 2.0 cumulative GPA is needed to meet University graduation requirements.

Major courses (Basic, Supporting, and Advanced) require a C– or better in each and a 2.0 average GPA.

1. Basic Program 15-16 credits

Sem	Gr	Cr	
		3	BSCI160 Ecology and Evolution *
		1	BSCI161 Ecology and Evolution Lab *
		3	BSCI170 Molecular and Cellular Biology *
		1	BSCI171 Molecular and Cellular Biology Lab *
		3	BSCI207 Principles of Biology III *
		4	BSCI222 Principles of Genetics *
		1	Freshmen seminar UNIV100 ¹ , HONR100, GEMS100, HLSC100, HACS100 ² , HDCC105 ² , HEIP143, HHUM105 ³ , BSCV181

¹All Biological Sciences majors must take UNIV100 or another approved freshman seminar from the list above in their first semester.

²Two credit course. ³Three credit course.

NOTE: Students who are enrolled in the Integrated Life Sciences Honors program will complete the following courses in lieu of the parenthetical course: HLSC207 (BSCI207), HLSC322 (BSCI222) and HLSC374 (BSCI374).

2. Supporting Courses 32 credits

Sem	Gr	Cr	
		4	MATH130 OR MATH140 Calculus I *
		4	MATH131 OR MATH141 Calculus II *
		3	CHEM131 General Chemistry I *
		1	CHEM132 General Chemistry I Lab *
		3	CHEM231 Organic Chemistry I *
		1	CHEM232 Organic Chemistry I Lab *
		3	CHEM241 Organic Chemistry II *
		1	CHEM242 Organic Chemistry II Lab *
		2	CHEM271 Gen Chem & Energetics *
		2	CHEM272 Bioanalytical Chem Lab *
		4	PHYS131 OR PHYS141 Physics I
		4	PHYS132 OR PHYS142 Physics II

* These are required benchmark courses, see:

<http://bsci.umd.edu/benchmarks>

3. General Education Requirements (at least 27 credits) (For more information on General Education visit: www.gened.umd.edu.)

Fundamental Studies Math (MA), Analytic Reasoning (AR), Natural Sciences (NS) & Natural Sci. Lab (NL) are satisfied by major requirements.

Courses may double or triple count between Distributive Studies, I-Series, and Diversity.

Sem	Gr	Course
Fundamental Studies		
		Academic Writing (AW) (ENGL101)
		Professional Writing (PW)
		Oral Communication (OC)
Distributive Studies		
		History and Social Sciences (HS)
		History and Social Sciences (HS)
		Humanities (HU)
		Humanities (HU)
		Scholarship in Practice (SP)
		Scholarship in Practice (SP) outside of major
I-Series		
		I-Series (IS)
		I-Series (IS)
Diversity		
		Understanding Plural Societies (UP)
		Understanding Plural Societies (UP) or Cultural Competence (CC) (1–3 credits)

Summary of credits	
Required	Completed
Basic Program (15–16)	_____
Supporting Courses (32)	_____
Gen. Ed. (27+)	_____
Advanced Program (27)	_____
Elective	_____
Subtotal	_____
Duplicate credits (Subtract from subtotal)	_____
Total Credits	_____

4. Advanced Program courses: Please see reverse page.

NOTES:

Student name _____ UID _____

Advisor's signature _____ Date of audit _____

NOTE: The curriculum in Biological Sciences changes as faculty review and improve the program. The curriculum descriptions provided here are the latest versions. Your curriculum may look slightly different depending on when you declared the Biological Sciences major. Your academic advisor can provide you with the most accurate information on which curriculum you are under. Any questions can be referred to the Undergraduate Academic Programs Office, 301-405-6892.

Updated 4/2016

Physiology & Neurobiology PHNB (0404E) Advanced Program

27 credits minimum ♦ At least two courses designated as **Lab must be taken**

1. Required courses: 14 credits

Sem	Gr	Cr	
		3	BCHM461 Biochemistry I OR BCHM463 Biochemistry of Physiology
		4	BSCI330 Cell Biology & Physiology w/ Lab
		4	BSCI440 Mammalian Physiology
		3	BSCI353 Principles of Neuroscience ¹

¹ Starting Fall 2012, only BSCI353 satisfies the Neurobiology course requirement that was previously fulfilled by BSCI446 or BSCI453.

2. PHNB Area courses: 10 credits

Sem	Gr	Cr		Sem	Gr	Cr	
		3	BSCI338E Neuroethology			4	BSCI434 Mammalian Histology w/ Lab
		2	BSCI338G Seminar on Deregulated Cell Growth in Cancer and Drug Development			2	BSCI441 Mammalian Physiology Lab ³
		3	BSCI338N Diseases of the Nervous System			4	BSCI442 Plant Physiology w/ Lab
		3	BSCI338P Pathophysiology of the Circulatory System			3	BSCI443 Microbial Physiology
		3	BSCI338R Darwinian Medicine			3	BSCI446 Neural Systems
		1	BSCI339C Cell Biology Lab ^{2,3}			3	BSCI447 Endocrinology
		3	BSCI339D Biology of Chemosensory Systems			3	BSCI451 Physical Chem. for Biologists
		3	BSCI339F Neurophysiology of Cells and Circuits			1	BSCI454 Neurobiology Lab ³
		2	BSCI339G Advanced Physiology			3	BCHM462 Biochemistry II
		3	BSCI339I Cellular Mechanisms of Aging and Disease			3	BCHM464 Biochemistry Lab
		3	BSCI360 Animal Behavior			3	BCHM465 Biochemistry III
		3	BSCI370 Principles of Evolution				
		4	BSCI374 Mathematical Modeling in Biology w/ Lab ⁴				
		3	BSCI401 Animal Communication				
		3	BSCI402 Genomics of Sensory Systems			3	Statistics, one course maximum
		3	BSCI403 Biology of Vision			3	BIOM301 Introduction to Biometrics
		3	BSCI410 Molecular Genetics			3	STAT400 Applied Probability & Statistics
		3	BSCI414 Recombinant DNA Lab			3	STAT464 Introduction to Biostatistics
		3	BSCI416 Human Genetics			var.	Special Topics Courses ⁵
		3	BSCI420 Cell Biology Lectures				BSCI328 Special Topics ENTM Depart.
		4	BSCI421 Cell Biology w/ Lab				BSCI338 Special Topics BIOL Depart.
		3	BSCI422 Principles of Immunology				BSCI339 Selected Topics BIOL Depart.
		2	BSCI423 Immunology Lab ³				BSCI348 Special Topics CBMG Depart.
		3	BSCI426 Membrane Biophysics				
		3	BSCI430 Developmental Biology				Departmental Honors Seminars ⁶
		3	BSCI433 Biology of Cancer			1	BSCI378H and BSCI398H

Total PHNB Area credits _____

² BSCI339C is the lab-only portion of BSCI421. BSCI339C together with BSCI420 counts as a PHNB Area lab course. It is not a stand-alone lab. Credit only granted for BSCI339C or BSCI421.

³ Requires a "C-" or better in the pre-/co-requisite lecture to count as a **Lab**.

⁴ Formerly BSCI474, cross-listed as HLSC374. Credit will be given for either BSCI374, HLSC374 or BSCI474.

⁵ Special Topics courses are allowed if approved for upper level courses in PHNB. See Testudo for applicability of a specific course.

⁶ One credit of Departmental Honors seminar may be applied to major requirements. Additional Departmental Honors seminar credits count as electives.

3. Enrichment 3 credits

Enrichment Course: _____ Credits: _____ Semester: _____ Grade: _____

Minimum 3 credits from any 300- or 400-level BSCI, CHEM, or BCHM course.

Courses from other departments can be used with permission of advisor.

Courses listed in the Advanced Program above can be used if they are not used to satisfy any category above.

Courses counted as Enrichment do not satisfy the 300- or 400-level laboratory requirement.

Independent study or research credits, including H and L versions, are acceptable up to a maximum of 3 credits overall in the Advanced Program.

Multiple semesters in research courses can possibly count for one of the two required lab courses. See your advisor for more details.

Total credits in Advanced Program: _____