

Neuroscience Curriculum

Attribute	Cr.		Course Name
Pre-reqs			
Pre-req	4	BIOL 220 (204)	Principles of Biology: Organisms, Ecology, Evolution Plus Lab and discussion (Fall)
Pre-req	4	BIOL 225 (203)	Principles of Biology: Molecules, Cells, Development Plus Lab and Discussion (Spr)
Pre-req	3	CHEM 103	General Chemistry I (Fall)
Pre-req	3	CHEM 206	Organic Chemistry I (Spr)
Pre-req	3	MATH 111 MATH 131	Calculus I (Fall, Spr) <i>or</i> Calculus I for the Life Sciences (Fall)
Pre-req	3	MATH 112 MATH 132	Calculus II (Fall, Spr) <i>or</i> Calculus II for the Life Sciences (Spr)
Pre-req	3	PSYC 201	Introduction to Psychology as a Natural Science (Fall, Spr)
Pre-req	3	PSYC 301 MATH 106 KINE 394	Elementary Statistics (Fall, Spr) , <i>or</i> Elementary Probability and Statistics (Fall, Spr), <i>or</i> Stats & Evaluation (Fall)
Required Courses - Please check all pre-reqs			
Required	3	APSC 351	Cellular Biophysics and Modeling (Spr) (MATH 112 or 132 is a pre-req, or Instructor Permission required)
Required	3	BIOL 345	Neurobiology (Spr)
Required	3	BIOL 310 (406)	Molecular Cell Biology (Fall, Spr)
Required	3	CHEM 307 CHEM 209	Organic Chemistry II for Life Sciences (Fall) <i>or</i> Organic Chemistry II (Fall)
Required	3	CHEM 308 CHEM 305 CHEM 335	General Chemistry II for Life Sciences (Spr) , <i>or</i> Inorganic Chemistry, (Spr) <i>or</i> Principles of Inorganic Chemistry, Freshman Hon.
Required	4	PHYS 107 PHYS 101	General Physics I for Life Sciences (Fall) <i>or</i> General Physics I
Required	4	PHYS 108 PHYS 102	General Physics II for Life Sciences (Spr) <i>or</i> General Physics II
Required	3	PSYC 313	Physiological Psychology (Fall, Spr)
<p>A major must also complete at least four additional courses. One course must be chosen from the Behavioral Neuroscience group. One course must be chosen from the Cell/Systems Neuroscience group. The remaining two courses may be from either the Behavior or Cell groups. Additionally, one of the remaining two electives may be satisfied with an undergraduate research experience (APSC 401/402, BIOL 403, CHEM 409, KINE 480/481, PSYC 491) for at least 3 credits. Research counting as an elective in the program must be conducted under the supervision of a Neuroscience faculty member (see http://www.wm.edu/neuroscience/directorya.php for a current listing).</p>			
Choose at least one Behavioral NSCI Elective - Please check all pre-reqs			
Beh.Elec.	3	BIOL 410	Animal Behavior (Fall)
Beh. Elec.	4	PSYC 302	Experimental Methods (Fall, Spr) (PSYC 301 is a pre-req; May satisfy Nsci 300)
Beh. Elec.	3	PSYC 311	Cognitive Psychology (Fall, Spr)
Beh. Elec.	3	PSYC 315	Foundations of Learning and Memory (Fall, Spr)
Beh. Elec.	3	PSYC 317	Sensation and Perception (Fall)
Beh. Elec.	3	PSYC 319	Cognitive Science (Spr, but may vary)
Beh. Elec.	4	PSYC 413	Research in Physiological Psychology (Fall) (PSYC 302 & 313 are pre-reqs; May satisfy Nsci 300)
Beh. Elec.	4	PSYC 415	Animal Cognition (Spr, but may vary) (PSYC 302 & 315 are pre-reqs; May satisfy Nsci 300)
Beh. Elec.	3	PSYC 445	Psychopharmacology (Fall)
Beh. Elec.	3	PSYC 447	PSYC 447 Cognitive Neuroscience (Spr)
Beh. Elec.	3	Research	
Choose at least one Cell/Systems NSCI Elective - Please check all pre-reqs			
Cell/Sys. Elec.	3	APSC 451	Applied Cellular Neuroscience (Fall)
Cell/Sys. Elec.	3	APSC 432	Applied Systems Neuroscience (Spr)
Cell/Sys. Elec.	3	BIOL 415	General Endocrinology (Fall)
Cell/Sys. Elec.	4	BIOL 432	Animal Physiology (Spr)
Cell/Sys. Elec.	3	BIOL 433	Developmental Biology (Fall) (May satisfy NSCI 300)
Cell/Sys. Elec.	3	BIOL 442	Molecular Genetics (Fall) (May satisfy NSCI 300)
Cell/Sys. Elec.	4	BIOL 447	Neurophysiology (Fall)
Cell/Sys. Elec.	3	CHEM 417	Neurochemistry (Fall- Will be next taught Sp '13 & subsequently taught in Spr) (May satisfy NSCI 300)
Cell/Sys. Elec.	3	KINE 450	Cardiovascular Physiology (Fall)
Cell/Sys. Elec.	3	KINE 485	Cellular and Biochemical Effects of Exercise (Fall)
Cell/Sys. Elec.	3	Research	
Choose one NSCI 300 experience			
Nsci Writing	3		NSCI 300 is cross-listed with PSYC 302, PSYC 413, PSYC 415, BIOL 433, BIOL 442 and CHEM 417. See enrollment requirements on our website
<p>NSCI 300. Writing in the Neurosciences. Students majoring in Neuroscience fulfill the major writing requirement by working with an individual faculty member, typically in a lecture or research course. Lecture courses that offer sections of NSCI 300 are PSYC 302, PSYC 413, PSYC 415, BIOL 433, BIOL 442 and CHEM 417. Declared majors should discuss the writing requirement with a faculty member during the first two weeks of the semester during which they would like to fulfill this requirement. Once accepted by a faculty member, the student will be given permission to enroll in the proper section of NSCI 300 by the faculty member. Students must register for this course during the add / drop period.</p>			
<p>NSCI 495-496. Honors in Neuroscience. Neuroscience Honors students complete empirically-based research projects that are conducted under the supervision of a Neuroscience faculty member. Intention to pursue honors must be filed with the Charles Center no later than the first day of classes of the semester in which the student will begin their thesis. This is usually the fall semester of their senior year (two semesters before graduation). In order to graduate with a degree with Honors in Neuroscience a student must (a) complete a written thesis that will be submitted to the honors examination committee at least two weeks before the last day of classes and (b) pass, with satisfactory performance, a comprehensive oral examination. For College provisions governing admission to Honors, see the catalog section titled Honors and Special Programs. Please visit the Program website for further information and updates. http://www.wm.edu/as/neuroscience.</p>			