

NEUROSCIENCE - BS, MOLECULAR AND CELLULAR NEUROSCIENCE

Neuroscience is the study of the nervous system and its impact on behavior and cognitive functions. This interdisciplinary field integrates several areas of study, including biology, chemistry, physics, biochemistry, psychology, and medicine. The core courses for this degree include a foundation in the life sciences, and a foundational sequence in neuroscience that will prepare students for more advanced NRSC courses. The Neuroscience degree track administered by the Department of Biology (NRSC MCB) focuses on the biological basis of neurological processes at the molecular and cellular level. Students completing the NRSC MCB degree will be well prepared for jobs in medical and biotechnology fields, and they will be competitive for admission to medical or graduate school.

Program Requirements

First Year

Fall		Semester Credit Hours
BIOL 111	Introductory Biology I ^{1,2}	4
CHEM 119	Fundamentals of Chemistry I ¹	4
ENGL 104	Composition and Rhetoric ²	3
MATH 147 or MATH 151	Calculus I for Biological Sciences ¹ or Engineering Mathematics I	4
Semester Credit Hours		15

Spring

BIOL 112	Introductory Biology II ^{1,2}	4
CHEM 120	Fundamentals of Chemistry II ¹	4
PBSI 107	Introduction to Psychology	3
Select one of the following: ¹		3-4
MATH 148	Calculus II for Biological Sciences	
MATH 152	Engineering Mathematics II	
STAT 201	Elementary Statistical Inference	
Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication) ³		3
Semester Credit Hours		17

Second Year

Fall		Semester Credit Hours
BIOL 213	Molecular Cell Biology ¹	3
NRSC 277/ VIBS 277	Essential Neuroscience - From Molecules to Nervous Systems ^{1,2}	3
PHYS 201	College Physics	4
Select one of the following: ¹		4
CHEM 227 & CHEM 237	Organic Chemistry I and Organic Chemistry Laboratory	
CHEM 257	Organic Chemistry I - Structure and Function	
Semester Credit Hours		14

Spring

PBSI 235	Introduction to Behavioral and Cognitive Neuroscience ²	3
PHYS 202	College Physics	4
POLS 206	American National Government	3
Select one of the following: ¹		4
CHEM 228 & CHEM 238	Organic Chemistry II and Organic Chemistry Laboratory	
CHEM 258	Organic Chemistry II - Reactivity and Applications	

Semester Credit Hours 14

Third Year

Fall

BICH 410	Comprehensive Biochemistry I	3
STAT 312	Statistics for Biology	3
NRSC 450/ VIBS 450	Mammalian Functional Neuroanatomy	4
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) ³		3
Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts) ³		3

Semester Credit Hours 16

Spring

BICH 411	Comprehensive Biochemistry II	3
BIOL 428	Cellular Neuroscience	3
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) ³		3
Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) ³		3

Semester Credit Hours 12

Fourth Year

Fall

BIOL 413	Cell Biology	3
BIOL 434/ NRSC 434	Regulatory and Behavioral Neuroscience	3
BIOL 435	Laboratory for Regulatory and Behavioral Neuroscience	1
Neuroscience electives ⁴		6

Semester Credit Hours 13

Spring

POLS 207	State and Local Government	3
Neuroscience electives ⁴		6
General electives ⁵		9-10

Semester Credit Hours 19

Total Semester Credit Hours 120

¹ Course must be completed by start of fifth full semester.

² Must earn a grade of C or better.

³ Select any approved course in area from Core Curriculum (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>) list.

⁴ Select from BIOL 388; BIOL 430, BIOL 444/NRSC 444; NRSC 300-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/pbsi/>); PBSI 320, PBSI 332, PBSI 333, PBSI 336, PBSI 340, PBSI 350, PBSI 360, PBSI 440. Maximum combination of 6 hours from 485 and 491 may be used.

⁵ Any course except AGLS 101; ASCC 101; ASCC 102; ASCC 289; BIMS 101; BIOL 101, BIOL 107, BIOL 113, BIOL 206; CHEM 106, CHEM 116; ECCB 101 MATH 102; MATH 142. Only one KINE 199 can be used as a general elective. Three hours must be in the area of International and Cultural Diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/>), and three hours must be in the area of Cultural Discourse (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/>). These may be in addition to other University Core Curriculum courses, or, if a course in this category satisfies another area of the Core, it can be used to meet both requirements.

The following are CBK courses and must be completed prior to the start of 5th full semester: BIOL 111 , BIOL 112 , BIOL 213 ; VIBS 277/NRSC 277 ; CHEM 119 , CHEM 120 , CHEM 257 or CHEM 227 and CHEM 237 , CHEM 258 or CHEM 228 and CHEM 238 ; MATH 147 , MATH 148 or STAT 201 .

Graduation requirements must include two courses in the major with the Writing Intensive (UWRT) attribute. Please see advisor for options.