

# 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 <sup>1,2</sup>	4
CHEM 119	Fundamentals of Chemistry I <sup>1</sup>	4
ENGL 104	Composition and Rhetoric <sup>2</sup>	3
MATH 147 or MATH 151	Calculus I for Biological Sciences <sup>1</sup> or Engineering Mathematics I	4
VIBS 101	Neuroscience Overview <sup>2</sup>	1
<b>Semester Credit Hours</b>		<b>16</b>

### Spring

BIOL 112	Introductory Biology II <sup>1,2</sup>	4
CHEM 120	Fundamentals of Chemistry II <sup>1</sup>	4
PBSI 107	Introduction to Psychology	3
Select one of the following: <sup>1</sup>		3-4
MATH 148	Calculus II for Biological Sciences	
MATH 152	Engineering Mathematics II	
STAT 201	Elementary Statistical Inference	
<b>Semester Credit Hours</b>		<b>14</b>

### Second Year

Fall		Semester Credit Hours
BIOL 213	Molecular Cell Biology <sup>1</sup>	3
CHEM 227	Organic Chemistry I <sup>1</sup>	3
CHEM 237	Organic Chemistry Laboratory <sup>1</sup>	1
NRSC 277/ VIBS 277	Essential Neuroscience - From Molecules to Nervous Systems <sup>1,2</sup>	3
PHYS 201	College Physics	4
<b>Semester Credit Hours</b>		<b>14</b>

### Spring

CHEM 228	Organic Chemistry II <sup>1</sup>	3
CHEM 238	Organic Chemistry Laboratory <sup>1</sup>	1
PBSI 235	Introduction to Behavioral and Cognitive Neuroscience <sup>2</sup>	3

PHYS 202	College Physics	4
Communication ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication</a> ) <sup>3</sup>		3

**Semester Credit Hours 14**

### Third Year

#### Fall

BICH 410	Comprehensive Biochemistry I	3
BIOL 428	Cellular Neuroscience	3
STAT 312	Statistics for Biology	3
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>3</sup>		3
Creative arts ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts</a> ) <sup>3</sup>		3

**Semester Credit Hours 15**

#### Spring

BICH 411	Comprehensive Biochemistry II	3
BIOL 434/ NRSC 434	Regulatory and Behavioral Neuroscience	3
BIOL 435	Laboratory for Regulatory and Behavioral Neuroscience	1
American history ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a> ) <sup>3</sup>		3
Language, philosophy and culture ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture</a> ) <sup>3</sup>		3

**Semester Credit Hours 13**

### Fourth Year

#### Fall

BIOL 413	Cell Biology	3
NRSC 450/ VIBS 450	Mammalian Functional Neuroanatomy	4
POLS 206	American National Government	3
Neuroscience electives <sup>4</sup>		6

**Semester Credit Hours 16**

#### Spring

POLS 207	State and Local Government	3
Neuroscience electives <sup>4</sup>		6
General electives <sup>5</sup>		8-9

**Semester Credit Hours 18**

**Total Semester Credit Hours 120**

<sup>1</sup> Course must be completed by start of fifth full semester.

<sup>2</sup> Must have a C or better.

<sup>3</sup> Select any approved course in area from Core Curriculum list.

<sup>4</sup> Select from BIOL 388; BIOL 430; NRSC 300-499 (<http://catalog.tamu.edu/undergraduate/course-descriptions/nrsc/>).

<sup>5</sup> Any course except AGLS 101; ASCC 101; ASCC 102; ASCC 289; BIMS 101; BIOL 107, BIOL 113, BIOL 206; CHEM 106, CHEM 116; 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, and three hours must be in the area of Cultural Discourse. 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.

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