

Neuroscience (BSA)

Total Hours Required: 120

Plan of Study

The Plan of Study is a suggested four-year course sequence to support academic planning and serves as a helpful guide. Currently enrolled students should meet with their academic advisor to tailor their course selections and timelines to their individual goals and circumstances.

Course	Title	Hours
Year 1		
Semester 1		
Hours chosen from:		4
M 408C	Differential and Integral Calculus	
M 408N	Differential Calculus for Science	
M 408R	Differential and Integral Calculus for the Sciences	
CH 301	Principles of Chemistry I	3
CH 104M	Introduction to Chemical Practice I	1
BIO 311C	Introductory Biology I	3
<u>First-Year Signature Course (090)</u>		3
Hours		14
Semester 2		
M 408S	Integral Calculus for Science	4
CH 302	Principles of Chemistry II	3
CH 104N	Introduction to Chemical Practice II	1
BIO 311D	Introductory Biology II	3
RHE 306	Rhetoric and Writing	3
Hours		14
Semester 3		
<u>American and Texas Government (070)</u>		3
Hours		3
Year 2		
Semester 1		
NEU 330	Neural Systems I	3
BIO 325	Genetics	3
BIO 206L	Introductory Laboratory Experiments in Biology	2
Language, Arts, and Culture		3
<u>Communication (010)</u>		3
Hours		14
Semester 2		
NEU 335	Neural Systems II	3
Minor/Certificate course		3
Free Elective		1
<u>Visual and Performing Arts (050)</u>		3
Hours		10
Semester 3		
<u>American and Texas Government (070)</u>		3
<u>U.S. History (060)</u>		3
Hours		6
Year 3		
Semester 1		
PHY 317K	General Physics I	3
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	1
NEU 340	Neural Systems III: Quantitative Tools	3
Minor/Certificate/Field of Study		3
Language, Arts, and Culture		3
<u>Humanities (040)</u>		3
Hours		16
Semester 2		
PHY 317L	General Physics II	3
PHY 105N	Laboratory For Physics 302L, 303L, and 317L	1
SDS 320E	Elements of Statistics	3

NEU 377	Undergraduate Research	3
Minor/Certificate course		3
Hours		13
Year 4		
Semester 1		
Hours chosen from: Upper-division NEU		3
Hours chosen from: Upper-division NEU		3
Minor/Certificate course		3
Minor/Certificate course		3
Language, Arts, and Culture		3
Hours		15
Semester 2		
Hours chosen from: Upper-division NEU		3
Hours chosen from: Upper-division NEU		3
Minor/Certificate course		3
Language, Arts, and Culture		3
<u>U.S. History (060)</u>		3
Hours		15
Total Hours		120

Requirements

All requirements are listed below, starting with the most specialized moving to the most general. Additional requirements may follow the table, so be sure to read the entire page. Some required courses listed below may also satisfy [General Education](#) requirements, including [Core Curriculum](#).

Code	Title	Hours
Major		
<i>Mathematics</i>		
Choose a sequence below:		4
Sequence 1:		
M 408C	Differential and Integral Calculus	
Sequence 2:		
M 408N	Differential Calculus for Science	
M 408S	Integral Calculus for Science	
Sequence 3:		
M 408R	Differential and Integral Calculus for the Sciences	
M 408S	Integral Calculus for Science	
SDS 320E	Elements of Statistics	3
<i>Primary Science</i>		
BIO 206L	Introductory Laboratory Experiments in Biology	2
Choose a sequence below:		6
Sequence 1:		
BIO 311C	Introductory Biology I	
BIO 311D	Introductory Biology II	
BIO 325	Genetics	
Sequence 2:		
BIO 315H	Advanced Introduction to Genetics: Honors	
BIO 325H	Genetics: Honors	
NEU 330	Neural Systems I	3
NEU 335	Neural Systems II	3
NEU 340	Neural Systems III: Quantitative Tools	3
Hours chosen from:		12
INB 353S	Sleep Science	
INB 359K	Principles of Animal Behavior	
MBS 367C	Cellular and Molecular Bases of Neural Development	
NEU 170C	Topics in Neuroscience	

NEU 270C	Topics in Neuroscience	
NEU 337	Selected Topics in Neuroscience	
NEU 361T	Comparative Animal Physiology	
NEU 365D	Principles of Drug Action	
NEU 365E	Epigenetics of Neuroscience	
NEU 365L	Neurobiology Laboratory	
NEU 365M	Advanced Experimental Neurobiology	
NEU 365N	Nerve Regeneration in Invertebrates and Vertebrates	
NEU 365P	Programming and Data Analysis for Modern Neuroscience	
NEU 365T	Neurobiology of Disease	
NEU 365W	Neurobiology of Addiction	
NEU 366C	Ion Channels and the Molecular Physiology of Neuronal Signaling	
NEU 366D	Synaptic Physiology and Plasticity	
NEU 366L	Neuroimaging Laboratory	
NEU 366R	Rhythms in the Nervous System	
NEU 366S	Neuromolecular Genetics and Disease Laboratory	
NEU 366W	Neural Computation	
NEU 367F	Foundations of Human Neuroimaging	
NEU 367S	Analytical Skepticism	
NEU 367V	Evolutionary Neurobiology	
NEU 377	Undergraduate Research (may be repeated once for credit)	
NEU 379H	Honors Tutorial Course (The research topic in Neuroscience 379H must relate to neuroscience and be approved in advance by the faculty advisor)	
NEU 466G	Functional and Synaptic Neuroanatomy	
NEU 466T	Modeling and Theory in Neuroscience	
<i>Secondary Science</i>		
CH 301	Principles of Chemistry I	3
or CH 301C	Foundations of Chemistry I	
CH 302	Principles of Chemistry II	3
or CH 302C	Foundations of Chemistry II	
Choose a sequence below:		2
Sequence 1:		
CH 204	Introduction to Chemical Practice	
Sequence 2:		
CH 104M	Introduction to Chemical Practice I	
CH 104N	Introduction to Chemical Practice II	
Choose a sequence below:		8
Sequence 1:		
PHY 317K	General Physics I	
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	
PHY 317L	General Physics II	
PHY 105N	Laboratory For Physics 302L, 303L, and 317L	
Sequence 2:		
PHY 303K	Engineering Physics I	
PHY 105M	Laboratory For Physics 302K, 303K, and 317K	
PHY 303L	Engineering Physics II	
PHY 105N	Laboratory For Physics 302L, 303L, and 317L	
Sequence 3:		
PHY 301	Mechanics	
PHY 101L	Laboratory for Physics 301	

PHY 316	Electricity and Magnetism	
PHY 116L	Laboratory for Physics 316	
<i>Subtotal</i>		52
Degree (see details below)		27
Free electives: Additional coursework to reach total hours required.		
General Education		
<u>Remaining Core Curriculum (42 hours total)</u>		41
<u>Foreign Language other than English, Beginning Proficiency</u>		
<i>Subtotal</i>		68
<u>College Requirements - Natural Sciences</u>		
<u>General University Requirements</u>		
Total Hours		120

Degree-Bachelor of Science and Arts (BSA)

The requirements for the Bachelor of Science and Arts are designed to give each student flexibility in the selection of courses to meet individual needs.

Code	Title	Hours
Language, Arts, and Culture		
Hours selected from at least two of the following four areas:		12
Fine arts: courses chosen from design, ensemble, fine arts, music, studio art, performance, visual art studies, art history, and theatre and dance		
Humanities: courses chosen from American studies, ancient history and classical civilization, classical civilization, comparative literature, creative writing, English, humanities, philosophy, religious studies, and rhetoric and writing		
Social and behavioral sciences: courses chosen from anthropology, economics, geography, government, history, linguistics, psychology, and sociology		
Foreign language and culture: foreign language courses or culture courses chosen from an approved list available in the college advising centers. Students who elect to pursue a foreign language must complete a beginning level competency. Students who complete intermediate or advanced level foreign language courses rather than courses equivalent to beginning level competency may count only one intermediate or advanced course toward the language, arts, and culture requirement (a maximum of six hours earned through credit by examination may count toward the language arts and culture requirement)		
Additional Requirements		
Completion of one of the following:		15
<u>Transcript-recognized minor or certificate</u> (minor outside the College of Pharmacy, Cockrell School of Engineering, Jackson School of Geosciences, and School of Nursing)		
Fifteen hours in a single field of study (outside the College of Natural Sciences, College of Pharmacy, Cockrell School of Engineering, Jackson School of Geosciences, and School of Nursing)		
Total Hours		27

Additional Requirements and Policies

- Students may not use a course counting toward one area of prescribed work to fulfill the requirements of another area of prescribed work unless expressly permitted as follows:

- a. Courses counting toward the university core curriculum may also count toward the major requirements, the additional requirement, and electives.
 - b. Per university policy, a minimum of nine hours of the transcript-recognized minor may not be also used to satisfy the major.
 - c. Per university policy, a minimum of one course taken in a transcript-recognized certificate to satisfy the additional requirement may not also count toward the major.
2. Students who seek a transcript-recognized minor or transcript-recognized certificate must meet the minimum grade requirements and grade point average requirements of the program.
 3. Students must earn a University grade point average of at least 2.00 in all courses taken at the University (including credit by examination, correspondence, and extension), a grade of at least C- in each mathematics and science course counted toward the major, and a grade point average of at least 2.00 in the courses fulfilling the major.
 4. Students must complete a minimum of 60 hours in residence at the University, including at least 18 hours of the major. The 18 hours of the major in residence must include at least nine hours of advanced coursework.