

MAJOR IN NEUROSCIENCE, BEHAVIORAL AND COGNITIVE NEUROSCIENCE CONCENTRATION

perception and learning/memory, generally applied to human behavior. Its focus is at the functional level of neuronal systems and networks. It differs from classical psychology in providing a more in-depth cellular and molecular basis for understanding behavior and neurological disorders that influence behavior. Graduates with this concentration are well prepared for many graduate and professional degree programs in health professions, as well as for careers in a variety of clinical settings, non-profit disease oriented foundations, and private sector organizations in either research-related or human resource service-related positions.

Overview

The Behavioral and Cognitive Neuroscience concentration integrates an understanding of neuroanatomy with the mechanisms of sensation/

Requirements Effective Fall 2024

Freshman

		AUCC	Credits
CHEM 111	General Chemistry I (GT-SC2)	3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)	3A	1
CHEM 113	General Chemistry II		3
CHEM 114	General Chemistry Lab II		1
CO 150	College Composition (GT-CO2)	1A	3
LIFE 102	Attributes of Living Systems (GT-SC1)	3A	4
MATH 155	Calculus for Biological Scientists I (GT-MA1)	1B	4
NB 192	Introductory Neuroscience Seminar		1
PSY 100	General Psychology (GT-SS3)	3C	3
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)		1C	3
Total Credits			30

Sophomore

CHEM 341	Modern Organic Chemistry I		3
CHEM 343	Modern Organic Chemistry II		3
CHEM 344	Modern Organic Chemistry Laboratory		2
LIFE 201B	Introductory Genetics: Molecular/Immunological/Developmental (GT-SC2)	3A	3
LIFE 210	Introductory Eukaryotic Cell Biology		3
PSY 252	Mind, Brain, and Behavior		3
Select one from the following:			3
CO 300	Writing Arguments (GT-CO3)	2	
CO 301B	Writing in the Disciplines: Sciences (GT-CO3)	2	
Select one of the following:			2
LIFE 203	Introductory Genetics Laboratory		
LIFE 212	Introductory Cell Biology Laboratory		
Select one from the following:			5
PH 121	General Physics I (GT-SC1)	3A	
PH 141	Physics for Scientists and Engineers I (GT-SC1)	3A	
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
Total Credits			30

Junior

BC 351	Principles of Biochemistry		4
BMS 300	Principles of Human Physiology		4

NB 399	Thesis Preparation		1
PSY 250	Research Design and Analysis I		3
Select one from the following:			3
PSY 352	Learning and Memory		
PSY 452	Cognitive Psychology		
Select one from the following:			3
STAT 301	Introduction to Applied Statistical Methods		
STAT 307	Introduction to Biostatistics		
Select two elective lecture courses not previously taken:			6
BMS 405	Nerve and Muscle-Toxins, Trauma and Disease		
BMS 425	Introduction to Systems Neurobiology		
BZ 433	Behavioral Genetics		
CHEM 320	Chemistry of Addictions		
MIP 300	General Microbiology		
PSY 454	Biological Psychology	4B	
PSY 456	Sensation and Perception	4B	
PSY 458	Cognitive Neuroscience	4B	
Select two elective laboratory courses not previously taken:			4-5
BMS 302	Laboratory in Principles of Physiology		
CHEM 442	Chemistry of Hemp and Cannabis		
MIP 302	General Microbiology Laboratory		
PSY 455	Biological Psychology Laboratory		
PSY 457	Sensation and Perception Laboratory		
PSY 459	Cognitive Neuroscience Laboratory	4A	
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)			3
Total Credits			31-32
Senior			
BMS 325	Cellular Neurobiology		3
BMS 345	Functional Neuroanatomy		4
NB 493	Senior Seminar	4C	1
NB 499	Senior Thesis	4A,4C	3
Select two groups from the following:			10
Group A:			
PSY 454	Biological Psychology	4B	
PSY 455	Biological Psychology Laboratory		
Group B:			
PSY 456	Sensation and Perception	4B	
PSY 457	Sensation and Perception Laboratory		
Group C:			
PSY 458	Cognitive Neuroscience	4B	
PSY 459	Cognitive Neuroscience Laboratory	4A	
Electives ¹			7-8
Total Credits			28-29
Program Total Credits:			120

¹ Select enough elective credits to bring the program total to a minimum of 120 credits, of which at least 42 must be upper-division (300- to 400-level).

Major Completion Map

Freshman

Semester 1		Critical	Recommended	AUCC	Credits
CHEM 111	General Chemistry I (GT-SC2)	X		3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)	X		3A	1
CO 150	College Composition (GT-CO2)	X		1A	3
LIFE 102	Attributes of Living Systems (GT-SC1)	X		3A	4
NB 192	Introductory Neuroscience Seminar	X			1
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)			X	3B	3
MATH 124, MATH 125, MATH 126 must be completed by the end of Semester 1, if necessary.		X			

Total Credits **16**

Semester 2		Critical	Recommended	AUCC	Credits
CHEM 113	General Chemistry II	X			3
CHEM 114	General Chemistry Lab II	X			1
MATH 155	Calculus for Biological Scientists I (GT-MA1)	X		1B	4
PSY 100	General Psychology (GT-SS3)	X		3C	3
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)			X	1C	3

Total Credits **14**

Sophomore

Semester 3		Critical	Recommended	AUCC	Credits
CHEM 341	Modern Organic Chemistry I	X			3
LIFE 210	Introductory Eukaryotic Cell Biology	X			3
PSY 252	Mind, Brain, and Behavior	X			3
Select one from the following:		X			5
PH 121	General Physics I (GT-SC1)			3A	
PH 141	Physics for Scientists and Engineers I (GT-SC1)			3A	

Total Credits **14**

Semester 4		Critical	Recommended	AUCC	Credits
CHEM 343	Modern Organic Chemistry II	X			3
CHEM 344	Modern Organic Chemistry Laboratory	X			2
LIFE 201B	Introductory Genetics: Molecular/Immunological/Developmental (GT-SC2)	X		3A	3
Select one course from the following:		X			3
CO 300	Writing Arguments (GT-CO3)			2	
CO 301B	Writing in the Disciplines: Sciences (GT-CO3)			2	
Select one course from the following:		X			2
LIFE 203	Introductory Genetics Laboratory				
LIFE 212	Introductory Cell Biology Laboratory				
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)			X	3B	3
CHEM 341 must be completed by the end of Semester 4.		X			

Total Credits **16**

Junior

Semester 5		Critical	Recommended	AUCC	Credits
BC 351	Principles of Biochemistry	X			4
BMS 300	Principles of Human Physiology	X			4
PSY 250	Research Design and Analysis I	X			3
Select one of the following:		X			3
PSY 352	Learning and Memory				

PSY 452	Cognitive Psychology				
Total Credits					14
Semester 6		Critical	Recommended	AUCC	Credits
NB 399	Thesis Preparation				1
Select one of the following:		X			3
STAT 301	Introduction to Applied Statistical Methods				
STAT 307	Introduction to Biostatistics				
Elective Lectures (see list on Program Requirements tab)		X			6
Elective Laboratories (see list on Program Requirements tab)		X			4-5
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)			X	3D	3
Total Credits					17-18
Senior					
Semester 7		Critical	Recommended	AUCC	Credits
BMS 325	Cellular Neurobiology	X			3
BMS 345	Functional Neuroanatomy	X			4
NB 493	Senior Seminar	X		4C	1
Select one group from the following (not previously taken):		X			5
Group A:					
PSY 454	Biological Psychology			4B	
PSY 455	Biological Psychology Laboratory				
Group B:					
PSY 456	Sensation and Perception			4B	
PSY 457	Sensation and Perception Laboratory				
Group C:					
PSY 458	Cognitive Neuroscience			4B	
PSY 459	Cognitive Neuroscience Laboratory			4A	
Electives			X		3
Total Credits					16
Semester 8		Critical	Recommended	AUCC	Credits
NB 499	Senior Thesis	X		4A,4C	3
Select one group from the following (not previously taken):		X			5
Group A:					
PSY 454	Biological Psychology			4B	
PSY 455	Biological Psychology Laboratory				
Group B:					
PSY 456	Sensation and Perception			4B	
PSY 457	Sensation and Perception Laboratory				
Group C:					
PSY 458	Cognitive Neuroscience			4B	
PSY 459	Cognitive Neuroscience Laboratory			4A	
Electives			X		4-5
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
Total Credits					12-13
Program Total Credits:					120