

**College of Science  
Bachelor of Science in Neuroscience  
For Students Graduating in 2019  
Major: Computational and Systems Neuroscience**

**Curriculum for Liberal Education (CLE) Requirements (40 credits)**

Area 1: Writing and Discourse	_____ (3) ( )	_____ (3) ( )
Area 2: Ideas, Cultural Traditions and Values	_____ (3) ( )	_____ (3) ( )
Area 3: Society and Human Behavior	_____ (3) ( )	_____ (3) ( )
Area 4: Scientific Reasoning and Discovery		
BIOL 1105 Principles of Biology	(3) ( )	BIOL 1106 Principles of Biology (3) ( )
BIOL 1115 Principles of Biol. Lab	(1) ( )	BIOL 1116 Principles of Biol. Lab (1) ( )
Area 5: Quantitative and Symbolic Reasoning		
MATH 1225 Calculus of Single Var.	(4) ( )	MATH 1226 Calculus of Single Var. (4) ( )
Area 6: Creative and Aesthetic Experience	_____ (3) ( )	Area 7: Critical Issues in Global Context _____ (3) ( )

**Core Neuroscience Requirements (21 Credits)**

CHEM 1035-1036	General Chemistry	(3) ( )	(3) ( )
NEUR 1004	Neuroscience Orientation Seminar		(1) ( )
NEUR 2025-2026	Introduction to Neuroscience	(3) ( )	(3) ( )
NEUR 2035-2036	Neuroscience Laboratory	(1) ( )	(1) ( )
NEUR 4044	Neuroscience Senior Seminar		(3) ( )
PSYC 1004	Introductory Psychology		(3) ( )

**Computational and Systems Neuroscience Major Requirements (23 Credits)**

CS 1114	Introduction to Software Design		(3) ( )
NEUR 4544	Synaptic Structure and Function		(3) ( )
NEUR 4454	Neuroeconomics		(3) ( )
PHYS 2305-2306	Foundations of Physics I	(4) ( )	(4) ( )
STAT 3005-3006	Statistical Methods	(3) ( )	(3) ( )

**Restrictive Electives (12 Credits)**

*A minimum of 12 credit hours are required from the list below. At least two courses must be at the 3000/4000 level.*

#ALS 2304	Comparative Animal Physiology and Anatomy	(4) ( )
#ALS/BIOL 4554	Neurochemical Regulation	(3) ( )
#BIOL 2004	Genetics	(3) ( )
#BIOL 2104	Cell & Molecular Biology	(3) ( )

#BIOL 3404	Introductory Animal Physiology		(3)	( )	
#BIOL 4824	Bioinformatics Methods		(3)	( )	
#BMES 2104	Introduction to Biomedical Engineering		(3)	( )	
#BMES 3134	Introduction to Biomedical Imaging		(3)	( )	
CHEM 1045-1046	General Chemistry Lab	(1)	( )	(1)	( )
#CHEM 2535-2536	Organic Chemistry	(3)	( )	(3)	( )
#CHEM 2545-2546	Organic Chemistry Lab	(1)	( )	(1)	( )
#CHEM 4554	Drug Chemistry		(3)	( )	
#CHEM 4615-4616	Physical Chemistry for the Life Sciences	(3)	( )	(3)	( )
#CS 3724	Introduction to Human-Computer Interaction		(3)	( )	
#CS 3824	Intro to Computational Biology & Informatics		(3)	( )	
#CS 4804	Introduction to Artificial Intelligence		(3)	( )	
#NEUR 3044	Cellular and Molecular Neuroscience		(3)	( )	
#NEUR 3064	Educational Neuroscience		(3)	( )	
#NEUR 3084	Cognitive Neuroscience		(3)	( )	
#NEUR 3144	Mechanism of Learning and Memory		(3)	( )	
NEUR 3464	Neuroscience and Society		(3)	( )	
#NEUR 3554	Neuroscience Research and Practical Experience		(3)	( )	
#NEUR 4034	Diseases of the Nervous System		(3)	( )	
#NEUR 4084	Developmental Cognitive Neuroscience		(3)	( )	
#NEUR 4594	Clinical Neuroscience in Practice		(3)	( )	
NEUR 4994	Undergraduate Research		(3)	( )	
#PHYS 2504	Math Methods in Physics		(3)	( )	
#PHYS 3314	Intermediate Laboratory		(3)	( )	
#PHYS 3405-3406	Intermediate Electricity and Magnetism	(3)	( )	(3)	( )
#PHYS 3704	Thermal Physics		(3)	( )	
#PHYS 4315	Modern Experimental Physics		(3)	( )	
#PHYS 4714	Introduction to Biophysics		(3)	( )	
#PSYC 2044	Psychology of Learning		(3)	( )	
#PSYC 2064	Nervous Systems and Behavior		(3)	( )	
#PSYC 4044	Advanced Learning		(3)	( )	
#PSYC 4114	Cognitive Psychology		(3)	( )	
#PSYC 4064	Physiological Psychology		(3)	( )	
#PSYC 4074	Sensation and Perception		(3)	( )	
#STAT 3424	Introduction to Statistical Neuroscience and Image Analysis		(3)	( )	
#STAT 4204	Experimental Designs		(3)	( )	
#SYSB 2025-2026	Introduction to Systems Biology	(3)	( )	(3)	( )

**Free Electives (24 Credits)**

_____	( _ cr)	_____	( _ cr)
_____	( _ cr)	_____	( _ cr)
_____	( _ cr)	_____	( _ cr)
_____	( _ cr)	_____	( _ cr)

**Foreign Language Requirement:** In order to graduate, students must meet a language study requirement. The College of Science requires three units of a single foreign or classical language (or American Sign Language) during high school or the second semester of a college-level foreign or classical language (or American Sign Language). These credit hours do not count toward the total minimum hours required for the declared degree program.

**#Prerequisites:** This check sheet contains courses that have at least one prerequisite that may not be included as part of this degree. Please see your advisor or consult the Undergraduate Course Catalog for more information.

**Acceptable Substitutions:**

BIOL 1105: BIOL 1005 General Biology

BIOL 1106: BIOL 1006 General Biology

BIOL 1115: BIOL 1015 General Biology Lab

BIOL 1116: BIOL 1016 General Biology Lab

CHEM 1035-1036: CHEM 1055-1056 General Chemistry for Majors

CHEM 1045-1046: CHEM 1065-1066 General Chemistry Lab for Majors

**Progress Towards Degree Policy:** After attempting 72 credits, students must have completed BIOL 1105, 1106, 1115, 1116, CHEM 1035-1036, NEUR 2025-2026 and 2035-2036; have a minimum overall GPA of 2.5; and have completed at least 24 credits that apply to the University Curriculum for Liberal Education requirements.

**Graduation Requirements:** Student must complete a minimum of 120 credit hours with an overall GPA of 2.0 and a minimum in-major GPA of 2.0. For purposes of GPA computation, courses IN-MAJOR will include BIOL 1105, 1106, 1115, 1116, MATH 1225-1226, Core requirements, Major requirements, and Restricted Electives.