NEUROSCIENCE, BACHELOR OF SCIENCE

To obtain a BS with a major in Neuroscience, a student must fulfill university, college, and departmental requirements. As an interdisciplinary major, Neuroscience major requirements meet the college breadth requirement.

Neuroscience Bachelor of Science Requirements

Code	Title	Credits
GENERAL EDUCATION REQUIREMENTS - 34 Hours Required		
Minimum of "C-"required		
Fundamental Skills		**15**
Writing – 6 hrs.		
ENGL 1150	ENGLISH COMPOSITION I	
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY	
Oral Communication – 3 hrs.		
CMST 1110	PUBLIC SPEAKING FUNDS	
or CMST 2120	ARGUMENTATION AND DEBATE	
Quantitative Literacy – 3 hrs.		
MATH 1120	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING	
or MATH 1130	QUANTITATIVE LITERACY	
or MATH 1140	QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS	
or MATH 1300	COLLEGE ALGEBRA WITH SUPPORT	
Data Literacy – 3 hrs.		
Select one from the following:		
STAT 1100	DATA LITERACY AND VISUALIZATION	
STAT 1530	ELEMENTARY STATISTICS	
Until Fall 2028, students can satisfy this requirement with an approved data literacy course, or any approved natural or social science general education course.		
Breadth of Knowledge		**13**
Social Science – 3 hrs.		
Humanities – 3 hrs.		
Natural & Physical Science (must complete a lab) – 4 hrs.		
Arts – 3 hrs.		
Individual and Social Responsibility		**6**
Cultural Knowledge – 3 hrs.		
Civic Knowledge and Engagement – 3 hrs.		
MAJOR REQUIREMENTS		
**Course will satisfy UNO's General Education requirement		
^Course requires pre-requisite(s)		
Note: BIOL 1450 may be used either in Core or in Path, not both		
Neuroscience Major - 50-59 Hours Required		
Required Neuroscience Fundamentals Courses (Core)		**20-23**
NEUR 1000	SUPERHEROES, ZOMBIES, CYBORGS AND DROIDS: COULD THEY LIVE AMONG US? (** ^)	
or BIOL 1450	BIOLOGY I	
NEUR 1520	INTRODUCTION TO NEUROSCIENCE I (^)	
NEUR 1540	INTRODUCTION TO NEUROSCIENCE II (^)	
PSYC 3130	STATISTICS FOR THE BEHAVIORAL SCIENCES (^)	
or STAT 3000	STATISTICAL METHODS I	
NEUR 3600	RESEARCH METHODS IN NEUROSCIENCE (^)	
or PSYC 3140	RESEARCH METHODS IN PSYCHOLOGY	
Select one of the following:		
PHYS 1110 & PHYS 1154	PHYSICS FOR LIFE SCIENCE I and GENERAL PHYSICS LABORATORY I (** ^)	
OR		
CHEM 1140 & CHEM 1144	FUNDAMENTALS OF COLLEGE CHEMISTRY and FUNDAMENTALS OF COLLEGE CHEMISTRY LABORATORY (** ^)	
OR		
CHEM 1180 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY (** ^)	
and		
CHEM 1190 & CHEM 1194	GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LABORATORY (^)	
Neuroscience Pathways: select one of the following		**12-17**
Pre-Health & Traditional Path - 12-17 credit hours		
BIOL 1450	BIOLOGY I (** ^)	
or BIOL 1750	BIOLOGY II	
BIOL 2140	GENETICS (^)	
Select one of the following:		
PHYS 1120 & PHYS 1164	PHYSICS FOR LIFE SCIENCE II and GENERAL PHYSICS LABORATORY II (^)	
OR		
CHEM 2210 & CHEM 2214	FUNDAMENTALS OF ORGANIC CHEMISTRY and FUNDAMENTALS OF ORGANIC CHEMISTRY LABORATORY (^)	
OR		
CHEM 2250 & CHEM 2260	ORGANIC CHEMISTRY I and ORGANIC CHEMISTRY II (^)	
and		
CHEM 2274	ORGANIC CHEMISTRY LABORATORY (^)	
Philosophy Path - 12-14 credit hours		
NEUR 1560	NEUROSCIENCE PATHWAYS TO DISCOVERY (^)	
or BIOL 1450	BIOLOGY I	
or BIOL 1750	BIOLOGY II	
or BIOL 2140	GENETICS	
PHIL 1030	INTRODUCTION TO PHILOSOPHY: BRAINS, MINDS, AND MACHINES (**)	
PHIL 2030	INTRODUCTION TO ETHICS (**)	
PHIL 1210	CRITICAL REASONING (**)	
or PHIL 2010	SYMBOLIC LOGIC	
or MEDH 2010	SYMBOLIC LOGIC	
Medical Humanities Path - 12-14 credit hours		
NEUR 1560	NEUROSCIENCE PATHWAYS TO DISCOVERY (^)	
or BIOL 1450	BIOLOGY I	

or BIOL 1750	BIOLOGY II
or BIOL 2140	GENETICS
MEDH 1000	INTRODUCTION TO MEDICAL HUMANITIES (**)
MEDH/HIST 2030	HISTORY OF MEDICINE: FROM ANTIQUITY TO THE PRESENT (** ^)
MEDH/PHIL 2300	BIOMEDICAL ETHICS
Computing Path - 12-14 credit hours	
NEUR 1560	NEUROSCIENCE PATHWAYS TO DISCOVERY (^)
or BIOL 1450	BIOLOGY I
or BIOL 1750	BIOLOGY II
or BIOL 2140	GENETICS
CIST 1600	INTRODUCTION TO PROGRAMMING USING PRACTICAL SCRIPTING (^)
or CIST 1400	INTRODUCTION TO COMPUTER SCIENCE I
BIOI 1000	DIGITAL HEALTH AND BIOLOGICAL SYSTEMS (**)
BIOI 3000	APPLIED BIOINFORMATICS (^)
Criminal Justice Path 12-14 credit hours	
NEUR 1560	NEUROSCIENCE PATHWAYS TO DISCOVERY
or BIOL 1450	BIOLOGY I
or BIOL 1750	BIOLOGY II
or BIOL 2140	GENETICS
CRCJ 1010	CRIME TO COURTROOM: THE JUSTICE JOURNEY (**)
Choose two of the following	
CRCJ 3350	CRIMINOLOGY (^)
CRCJ 4000	MENTAL HEALTH AND THE CRIMINAL JUSTICE SYSTEM (^)
CRCJ 4500	DRUGS AND CRIME (^)
CRCJ 4510	VIOLENCE (^)

Advanced Neuroscience Courses **18-19**

In addition to the required fundamentals courses, 18-19 credit hours as a combination from the Cornerstone Neuroscience Lecture (3 credits), Laboratory (3 – 4 credits), and Block I, Block II, and Block III Courses (12 credits) from the lists below must be selected. Within the 12-hour credit selection, at least 3 credits must come from Block I and at least 3 credits must come from Block II. To complete the 18 credits required, a minimum of 6 credits can be taken from a combination of Block I, Block II, and Block III. No more than three hours of Experiential Study in Neuroscience (NEUR 4960) may be applied to the Additional Neuroscience Courses category. NEUR 4910, NEUR 4920, and NEUR 4930 may be taken more than once as long as they are different topics. No courses can double-count within this 18-credit hour group.

Select one of the following Cornerstone lab courses -	
NEUR 4200	ADVANCED NEUROSCIENCE LABORATORY (^)
NEUR/BIOL 4810	BEHAVIORAL GENETICS (^)
PSYC/BIOL 4280	ANIMAL BEHAVIOR LABORATORY (^)
Select one of the following Cornerstone lecture courses that has not already been used to satisfy the Neuroscience Block Courses requirement below	
NEUR 4000	SYSTEMS NEUROSCIENCE (^)
NEUR 4160	NEUROPHARMACOLOGY (^)
NEUR 4330	SOCIAL NEUROSCIENCE (^)
NEUR 4480	NEUROIMMUNOLOGY (^)
NEUR/BIOL 4870	MOLECULAR AND CELLULAR NEUROBIOLOGY (^)
NEUR/BIOL 4890	GENES, BRAIN, AND BEHAVIOR (^)
PSYC/BIOL 4320	HORMONES & BEHAVIOR (^)
Block I, II, and III Courses	
Select at least one of the following from Block I Neuroscience Choices: Molecular and Cellular Neuroscience	
NEUR 4000	SYSTEMS NEUROSCIENCE (^)
NEUR 4160	NEUROPHARMACOLOGY (^)
NEUR 4290	NEUROETHOLOGY (^)
NEUR 4340	ADVANCED BEHAVIORAL NEUROSCIENCE (^)
NEUR 4480	NEUROIMMUNOLOGY (^)
NEUR 4640	NEURAL MECHANISMS OF SUBSTANCE USE DISORDERS (^)
NEUR 4840	GLIA IN HEALTH AND DISEASE (^)
NEUR 4850	NEUROBIOLOGY OF LEARNING AND MEMORY (^)
NEUR 4870	MOLECULAR AND CELLULAR NEUROBIOLOGY (^)
NEUR/BIOL 4890	GENES, BRAIN, AND BEHAVIOR (^)
NEUR 4910	SPECIAL TOPICS IN NEUROSCIENCE - BLOCK 1 (^)
Select at least one of the following from Block II Neuroscience Choices: Behavioral and Cognitive Neuroscience	
NEUR/BIOL/GERO 3500	BIOLOGICAL PRINCIPLES OF AGING (^)
NEUR/GERO 4050	ADVANCED BIOLOGY OF AGING
NEUR/PSYC 4230	BEHAVIORAL NEUROSCIENCE (^)
NEUR 4330	SOCIAL NEUROSCIENCE (^)
NEUR/BMCH 4650	NEUROMECHANICS OF HUMAN MOVEMENT (^)
NEUR 4710	AI IN HEALTHCARE AND NEUROSCIENCE
NEUR 4920	SPECIAL TOPICS IN NEUROSCIENCE - BLOCK 2 (^)
PSYC 4090	COGNITIVE NEUROSCIENCE (^)
PSYC 4210	SENSATION AND PERCEPTION (^)
PSYC/PHIL 4250	LIMITS OF CONSCIOUSNESS (^)
PSYC/BIOL 4270	ANIMAL BEHAVIOR (^)
PSYC/BIOL 4320	HORMONES & BEHAVIOR (^)
Block III Additional Neuroscience Choices:	
NEUR 4930	SPECIAL TOPICS IN NEUROSCIENCE - NEURO ELECTIVE BLOCK (^)
NEUR 4960	EXPERIENTIAL STUDY IN NEUROSCIENCE (^)

College Breadth

College of Arts and Sciences' college breadth requirement satisfied by this major

Bachelor Science Cognate Requirement **15**

Students must complete 15 credits worth of a cognate set of courses (see below) OR may choose a minor of at least 15 hours or a double major. Courses taken within the major may not also be used toward the completion of cognate coursework. One cognate course may double-count with your Gen Ed requirements. No more than 6 hours of cognate coursework may be at the 1000 level. At least 3 hours of cognate coursework must be at the 3000-4000 level. Note that some classes have prerequisites.

ANTH 1050	INTRODUCTION TO ANTHROPOLOGY (**)
ANTH 3910	INTRODUCTION TO PHYSICAL ANTHROPOLOGY (** ^)
ANTH 4230	ETHNOMEDICINES OF THE AMERICAS (^)
ANTH 4240	MEDICAL ANTHROPOLOGY
BIOI 1000	DIGITAL HEALTH AND BIOLOGICAL SYSTEMS (**)
BIOL 2740	HUMAN ANATOMY AND PHYSIOLOGY I (^)
BIOL 2840	HUMAN ANATOMY AND PHYSIOLOGY II (^)
BIOL 3020	MOLECULAR BIOLOGY OF THE CELL (^)
BIOL 3240	INTRODUCTION TO IMMUNOLOGY (^)
BIOL 4110	STATISTICS FOR BIOLOGICAL SCIENCES (^)
BIOL 4130	MOLECULAR GENETICS (^)
BIOL 4140	CELLULAR BIOLOGY (^)
BIOL 4230	EVOLUTION (^)
BIOL 4260	BEHAVIORAL ECOLOGY (^)
BIOL 4650 & BIOL 4654	BIOCHEMISTRY I and BIOCHEMISTRY I LABORATORY (^)
BIOL 4730	VERTEBRATE ENDOCRINOLOGY (^)
BIOL 4740	ANIMAL PHYSIOLOGY (^)
BIOL 4850	DEVELOPMENTAL BIOLOGY (^)
BIOL 4860	COMPARATIVE GENOMICS (^)
BIOL 4960	ADVANCED GENETICS (^)
BMCH 2400	HUMAN PHYSIOLOGY & ANATOMY I (**)
BMCH 2500	HUMAN PHYSIOLOGY AND ANATOMY II (^)
BMCH 4100	BIOINSPIRED ROBOTICS
CHEM 3650 & CHEM 3654	FUNDAMENTALS OF BIOCHEMISTRY and FUNDAMENTALS OF BIOCHEMISTRY LABORATORY (^)
CHEM 4610	BIOCHEMISTRY OF METABOLISM (^)
CHEM 4650 & CHEM 4654	BIOCHEMISTRY I and BIOCHEMISTRY I LABORATORY (^)
CSCI 1200 & CSCI 1204	COMPUTER SCIENCE PRINCIPLES and COMPUTER SCIENCE PRINCIPLES LABORATORY (** ^)
ENVN 4320	ECOLOGICAL SUSTAINABILITY AND HUMAN HEALTH (^)
MATH 1940	CALCULUS FOR BIOMEDICINE (^)
PHIL 2020	INTRODUCTION TO PHILOSOPHY OF MIND
PHIL 3650	PHILOSOPHY OF MIND (^)
PHIL 4220	NEUROETHICS (^)
PHYS 3300	INTRODUCTION TO BIOMEDICAL PHYSICS (^)
PHYS 3500	ELEMENTS OF ELECTRONICS (^)
PHYS 4500	BIOLOGICAL PHYSICS (^)
PSYC 1010	INTRODUCTION TO PSYCHOLOGY I (**)
PSYC 1020	INTRODUCTION TO PSYCHOLOGY II (^)
PSYC 2040	EXPLORATIONS IN THE SCIENCE OF PSYCHOLOGY
PSYC 3520	CHILD PSYCHOLOGY (^)
PSYC 4020	LEARNING (^)
PSYC 4024	LABORATORY IN PSYCHOLOGY: LEARNING (^)
PSYC 4234	LABORATORY IN PSYCHOLOGY: BEHAVIORAL NEUROSCIENCE (^)
PSYC 4440	ABNORMAL PSYCHOLOGY (^)
PSYC 4460	PSYCHOLOGY OF ADULT DEVELOPMENT AND AGING (^)
PSYC 4470	MENTAL HEALTH AND AGING (^)
PSYC 4990	SENIOR THESIS (^)
ELECTIVES	
Elective hours as required to reach a total of 120 hours	

Concentration Offered

- Computing & Neurotechnology (http://catalog.unomaha.edu/undergraduate/college-arts-sciences/neuroscience/neuroscience-bs/computing-neurotechnology-conc/)
- Medical, Health Sciences, and Research Concentration in Neuroscience (http://catalog.unomaha.edu/undergraduate/college-arts-sciences/neuroscience/neuroscience-bs/med-health-research-conc/)

Neuroscience Bachelor of Science Four Year Plan

Freshman

Fall		**Credits**
NEUR 1000 or BIOL 1450	SUPERHEROES, ZOMBIES, CYBORGS AND DROIDS: COULD THEY LIVE AMONG US? or BIOLOGY I	3-5
ENGL 1150	ENGLISH COMPOSITION I	3
MATH 1120 or MATH 1130 or MATH 1140 or MATH 1300	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING (See advisor for other options) or QUANTITATIVE LITERACY or QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS or COLLEGE ALGEBRA WITH SUPPORT	3-4
NEUR 1520	INTRODUCTION TO NEUROSCIENCE I	3
Attend Durango Days; other campus events. Set up a Handshake account and take the Pathway U career assessment. Attend the Student Involvement & Volunteer Fair to explore student organizations. Make advising appointment for spring: Sept-Oct. Work with your advisor to develop your Pathway in Stellic.		
	Credits	**12-15**
Spring		
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY	3
NEUR 1540	INTRODUCTION TO NEUROSCIENCE II	3
Neuroscience Pathway Course		3-5
Neuroscience Pathway Course		3-5
Attend campus events such as major exploration week to get an idea of interests and career paths. Schedule a resume review with UNO Career Services. Visit faculty office hours and ask about undergraduate research opportunities. Make advising appointment for summer and fall: February – March.		
	Credits	**12-16**

Sophomore

Fall

CHEM 1140 & CHEM 1144	FUNDAMENTALS OF COLLEGE CHEMISTRY and FUNDAMENTALS OF COLLEGE CHEMISTRY LABORATORY (*)	5
PSYC 3130	STATISTICS FOR THE BEHAVIORAL SCIENCES	3
Neuroscience Block 2 Course		3
General Education Course or Elective		3

*CHEM 1140: Taking both CHEM 1180-1184 and 1190-1194 will substitute for CHEM 1140-1144. Alternatively, students may take PHYS 1110-1154 in lieu of Chemistry coursework.

Attend the Career & Internship Fair to start networking with employers. Look for volunteer, research, or part-time work to gain experience. Join a student organization or club related to your field or interests. Make advising appointment for spring: Sept. - Oct.

Credits **14**

Spring

CMST 1110 or CMST 2120	PUBLIC SPEAKING FUNDS or ARGUMENTATION AND DEBATE	3
NEUR 3600 or PSYC 3140	RESEARCH METHODS IN NEUROSCIENCE or RESEARCH METHODS IN PSYCHOLOGY	3-4
Neuroscience Pathway Course		3-5
General Education Course or Elective		3

Attend a career fair for informational and networking purposes. Update your resume and LinkedIn profile with new experiences. Investigate and apply for summer internships, research, or study abroad programs. Make advising appointment for summer and fall: February – March.

Credits **12-15**

Junior

Fall

Neuroscience Pathway Course or Elective		3-4
Neuroscience Block 1 Course		3
Cognate Course		3
General Education Course or Elective		3
Elective		3

Apply for a paid internship or research assistantship. Attend a mock interview workshop or use online interview tools with Career Services. Start researching and visiting graduate programs or professional schools. Visit Career Center, continue updating resume. Make advising appointment for spring: Sept-Oct.

Credits **15-16**

Spring

NEUR 4200	ADVANCED NEUROSCIENCE LABORATORY	3-4
OR		
PSYC/BIOL 4280	ANIMAL BEHAVIOR LABORATORY	
OR		
NEUR/BIOL 4810	BEHAVIORAL GENETICS	
Cornerstone Neuroscience Lecture Course		3
General Education Course or Elective		3
General Education Course or Elective		3
Cognate Course		3

Request letters of recommendation from faculty for jobs or grad school. Attend the All-Majors Career Fair with a plan to network. Meet with your advisor or submit for a graduation check-in to review remaining degree requirements. Make advising appointment for summer and fall: February – March.

Credits **15-16**

Senior

Fall

Neuroscience coursework (Block 1, 2, or 3)	3
General Education Course or Elective	3
Cognate Course	3
Cognate Course	3
Elective	3

Check in with Career Center for networking tips. Finalize graduate school applications or job search strategy. Attend a career fair and start applying for full-time jobs. Prepare for interviews and salary negotiations with Career Services. Make advising appointment for spring: Sept. - Oct.

Credits **15**

Spring

Neuroscience coursework (Block 1, 2, or 3)	3
Cognate Course	3
Elective	3
Elective	3
Elective	3

Request letters of recommendation from faculty for jobs or grad school. Attend the All-Majors Career Fair with a plan to network. Meet with your advisor or submit for a graduation check-in to review remaining degree requirements. Make advising appointment for summer and fall: February – March.

Credits **15**

Total Credits **110-122**

College Breadth: The Neuroscience major satisfies Option 3 of the CAS Breadth Requirement.

Upper Level Credits: Students need 27 upper level credits throughout the degree with at least 18 upper level credits within the major. Electives may need to be selected at the 3000-4000 level to reach these minimums.

Additional Information About this Plan:
University Degree Requirements: The minimum number of hours for a UNO undergraduate degree is 120 credit hours. Please review the requirements for your specific program to determine all requirements for the program. In order to graduate on-time (four years for an undergraduate degree), you need to take 30 hours each year.

Placement Exams: For Math, English, World Language, a placement exam may be required. More information on these exams can be found at https://www.unomaha.edu/enrollment-management/testing-center/placement-exams/information.php

Transfer credit or placement exam scores may change suggested plan of study.

GPA Requirements: 2.0

Note: This plan provides a general guide, but your specific courses, experiences, and career goals may differ. Work with your academic advisor to ensure you're meeting degree requirements and consult with career advisors to explore internships, research opportunities, and post-graduation

plans. Regular check-ins will help you stay on track and make the most of your time at UNO!