

BACHELOR OF SCIENCE IN NEUROSCIENCE

CURRICULUM SHEET | CATALOG YEAR: 2024 - 2025

NAME _____ SID _____ EXPECTED GRADUATION DATE _____

GENERAL EDUCATION REQUIREMENTS (36-38 UNITS)

English Composition

ENGL 101 or 107
.....3__
ENGL 102 or 108
.....3__
Or
ENGL 109H
.....3__

Foundation Mathematics

MATH 122A/B or MATH
125.....4__ 1__
**Some students may need to take MATH 100 -> MATH 112 ->
MATH 120R before taking 122A.*

Second Language

2nd semester proficiency by credit or exam required
.....__

Intro to General Education

UNIV 101
.....1__

Exploring Perspectives

Artist: _____
.....3__
Humanist: _____
.....3__
Social Scientist: _____
.....3__
Natural Scientist (*Requirement satisfied by NS foundations*)

Building Connections

1: _____
.....3__
2: _____
.....3__
3: _____
.....3__

General Education Capstone

UNIV 301
.....1__

Neuroscience Required Supporting Coursework (30-33 Units)

Biology

MCB 181R & 181L
.....3__ 1__

Chemistry

CHEM 151
.....4__
CHEM 152
.....4__
CHEM 241A & 243A
.....3__ 1__

Mathematics

MATH 122A/B or MATH
125.....4__ 1__
MATH 263
.....3__
or BIOS 376
.....3__
MATH 129 (*recommended*)
.....3__

Physics

PHYS 102 & 181
.....3__
1__
or PHYS 141
.....4__
PHYS 103 & 182
.....3__
1__
or PHYS 241
.....4__

Neuroscience Major Requirements (20 -21 units)

Core Requirements

NROS 193A – Neuroscience Colloquium
.....1__
NROS 210A – Contemporary Approaches to Neuroscience 1__
NROS 307/H – Cellular Neurophysiology
.....3__
NROS 308 – Methods in Neuroscience (*optional*)
.....1__
NROS 311 – Neuroinformatics and Scientific Coding
.....3__
NROS 310/H – Molecular and Cellular Biology of Neurons 3__
NROS 317 – Genetics & Genomics in Neuroscience
.....3__

NROS 318 – Systems Neuroscience
3__
 BIOC 384 – Foundations in Biochemistry
3__

Course 3: _____
3__
 Lab/Research/Internship/CURE:
 _____3__
 Writing Emphasis Elective:
3__
 Upper Division Elective: _____
3__

Emphasis Requirement (18 units)

Student must choose one emphasis from:

1. *Neuroscience and Human Health*
2. *Integrated Neuroscience: Molecular, Cellular, Systems Neuroscience*
3. *Neuroscience, Communication and Public Health*
4. *Thematic*

Emphases generally consist of:

- 3 courses from emphasis listing* (9 units)
- 1 Lab/Research/Internship/CURE* (3 units)
- 1 Upper division NROS elective* (3 units)
- 1 Writing emphasis Elective* (3 units)

*See next page for details on acceptable courses

Emphasis: _____
 Course 1: _____
3__
 Course 2: _____
3__

University Requirements			
120 total units	<input type="checkbox"/>	42 upper division units	<input type="checkbox"/>
2.000 + cumulative GPA	<input type="checkbox"/>	2.000 + major GPA	<input type="checkbox"/>
MCWA complete	<input type="checkbox"/>	Final 18/ 30 units complete	<input type="checkbox"/>
30+ total units at UA	<input type="checkbox"/>	18+ NS units at UA	<input type="checkbox"/>

Lab/Research/Internship/CURE Courses

- | | |
|---|---|
| <p>NROS 314 – Neuroscience Research Experience CURE
 NROS 314 – Brain Communication Networks VIP-CURE
 NROS 392/492 – Directed Research
 NROS 392H/492H – Honors Directed Research
 NROS 399/499 – Independent Study</p> | <p>NROS 399H/499H – Honors Independent Study
 NROS 493 – Internship Experience
 NROS 498 – Senior Capstone
 NROS 498H – Honors Thesis</p> |
|---|---|

Writing Emphasis Courses

- | | |
|--|--|
| <p>NROS 455 – Bioethics
 NROS 460 – Science Writing Strategies, Skills & Ethics
 NROS 498 – Senior Capstone</p> | <p>NROS 498H – Honors Thesis
 ECOL 379 – Evidence Based Medicine</p> |
|--|--|

Emphasis Options	
<p>Neuroscience and Human Health NROS 330 – Principles of Neuroanatomy: Cells to Systems NROS 425 – Neural Circuits in Health and Disease NROS 435 – Complex Behavioral, Cognitive and Emotional Disorders NROS 445 – Neuropharmacology & Addiction NROS 430 – Neurogenetics NROS 440 – How to Build a Brain: Mechanisms of Neural Development NROS 450 – Neurons and Glia in Health and Disease ECOL 379 – Evidence Based Medicine</p>	<p>Neuroscience, Communication and Public Health ENGR 495A – Science, Health & Engineering Policy and Diplomacy GLO 465 – Science Misinformation, Disinformation, Media & the Public JOUR 305 – Full STEM Ahead: Science and the News JOUR 465/565 – Issues Covering Science and the Environment LAW 415 – Healthcare Ethics LAW 452 – Health Law LAW 476A – Drug Discovery, Development, and Innovation to Reach the Marketplace</p>

	<p>PHP 419 – Alzheimer’s Disease, Other Dementias, and the role of Public Health</p> <p>PHPM 448 – Addiction and Substance Use Policy</p> <p>POL 206 – Public Policy and Administration</p>
<p>Integrated Neuroscience: Molecular, Cellular, Systems Neuroscience</p> <p>NROS 330 – Principles of Neuroanatomy: Cells to Systems</p> <p>NROS 381 – Animal Brains, Signals, Sex, and Social Behaviors</p> <p>NROS 412 – Molecular Mechanisms of Learning and Memory</p> <p>NROS 415 – Electrophysiology</p> <p>NROS 420 – The Neuroscience of Survival</p> <p>NROS 430 – Neurogenetics NROS 440 – How to Build a Brain: Mechanisms of Neural Development</p> <p>NROS 450 – Neurons and Glia in Health and Disease</p> <p>NROS 425 – Neural Circuits in Health and Disease</p> <p>CGSC 344 – Modeling the Mind: Computational Models of Cognition</p> <p>ISTA 457 – Neural Networks</p> <p>PHYS 431 – Molecular Biophysics</p> <p>PSY 435 – Computational Neuroscience: Neural Spike Data Analyses</p>	<p>Thematic</p> <p>May choose from all emphasis courses.</p> <p>The thematic emphasis is meant for students who have a <i>very clear and compelling interest in a particular topic area</i> in neuroscience. As is the case for the other emphases, the overall learning objective is to develop <i>real depth</i> in a particular area that students then can use in reaching their particular career goals. The possibility of adding a course that is not currently on the course lists for the existing emphasis can be considered if it would expand or modify the emphasis enough to make it a better fit for the student's interests.</p>

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