

# NEUROSCIENCE MAJOR

## Degree Requirements

All students are required to complete overall degree requirements in addition to their major. Please see Degree Completion Requirements (<https://catalog.hiram.edu/undergraduate/student-academic-responsibilities-performance/degree-completion-requirements/>) for full details for students entering in the 2022-2023 catalog year.

Those students who started at Hiram prior to the 2022-2023 academic year will follow the Degree Requirements outlined in your catalog of record.

## Major Requirements

To major in neuroscience, a student shall complete at least 43 hours of coursework in the program, and maintain a cumulative grade-point average of 2.0 or higher. Students must complete coursework in several key areas:

- Four core courses,
- Two correlative courses in chemistry, and
- Five courses from one of the three areas of concentration

All students must complete a senior capstone project, and must present their results to the general public. To receive honors in the program, students must complete an independent experimental research project as part of their capstone.

### Core Courses

The four core requirements will introduce students to the breadth of subjects studied in neuroscience and will equip them for advanced courses in the curriculum. Every student must pass each of the core courses (16 credit hours) with a grade of C or better.

### Correlative Courses

In addition to mastering the basics of neuroscience, it is necessary for all students to gain a basic understanding of general chemistry. Therefore, neuroscience majors must also complete the correlative courses (8 credit hours) with a grade of C or better.

### Areas of Concentration

Students majoring in neuroscience must declare their area of concentration within one of the many domains outlined above by the end of their sophomore year, and must complete a minimum of five courses (15-20 credit hours) within that concentration.

### Senior Capstone

Before graduation, each student must complete an approved senior capstone project (course number: NEUR 48000 NEUROSCIENCE CAPSTONE). **Each student must present a project proposal to a member of the neuroscience faculty and receive approval by the end of their junior year to receive credit towards the major for their capstone project.** Students **must** have approval before they can carry out their project. Students must present their project at a public seminar. Capstone seminars run in both the fall and spring semesters.

All questions about majoring in neuroscience should be directed to your academic advisor, or Dr. Tom Koehnle, Neuroscience

Program Coordinator. Dr. Koehnle can be reached ext. 5316 or KoehnleTJ@hiram.edu.

Code	Title	Hours
<b>Core Courses</b> <sup>1</sup>		
PSYC 10100	GENERAL PSYCHOLOGY	4
NEUR 22700	INTRO TO NEUROSCIENCE	4
PSYC/BIOL 21000	RESEARCH DESIGN & ANALYSIS:SM (Methods Course)	4
BIOL 32600	ANIMAL PHYSIOLOGY-W/LAB	4
<b>Correlative Courses</b> <sup>1</sup>		
CHEM 12000	GEN I:STRUCTURE/BOND-W/LAB:SM	4
CHEM 12100	GEN II:INTR CHEM ANLS-W/LAB:SM	4
<b>Areas of Concentration</b>		<b>15-20</b>
<i>Cellular and Molecular Concentration</i>		
Two required courses:		
BIOL 23000	MOLECULAR&CELLULAR BIOL-W/LAB	
BIOL 36500	GENETICS-W/LAB	
Three courses from the following list:		
BCHM 36600	BASIC BIOCHEMISTRY-W/LAB	
BCHM 36800	INTERMED BIOCHEMISTRY-W/LAB	
BIOL 33000	CELLULAR & MOLECULAR NEUROBIO	
BIOL 34000	DEVELOPMENTAL BIOL-W/LAB	
BIOL 41500	ADV MOLECULAR BIOL-W/LAB	
<i>Cognitive and Behavioral Concentration</i>		
Two required courses:		
PSYC 24000	ANIMAL COGNITION	
PSYC 31600	LEARNING THEORY METHOD/APP	
Three courses from the following list:		
PSYC 21800	PERSONALITY	
PSYC 35500	ABNORMAL PSYCHOLOGY	
PSYC 25600	DRUGS & BEHAVIOR	
PSYC 34400	SOCIAL PSYCHOLOGY	
PSYC 36700	DRUG USE AND ABUSE	
<i>Computational Neuroscience Concentration</i>		
Two required courses:		
CPSC 17100	INTRO TO COMPUTER SCI-W/LAB:MM	
CPSC 17200	INTRO TO PROGRAMMING-W/LAB:MM	
Two courses from the following list:		
CPSC 20100	DATA STRUCTUR/ALRITHM-W/LAB:MM	
CPSC 25200	COMPUTER ORGANIZATION	
CPSC 35600	DATABASE DESIGN	
CPSC 36100	COMPUTER SIMULATION:SM	
CPSC 38600	ARTIFICIAL INTELLIGENCE	
<b>Senior Capstone</b>		
NEUR 48000	NEUROSCIENCE CAPSTONE	4
<b>Total Hours</b>		<b>43-48</b>

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Must be passed with a C or better.

# Pathway

Course	Title	Hours	Term
<b>First Year</b>			
<b>Fall 12 Week</b>			
UCS 10101	FIRST-YEAR ENDURING QUESTIONS	4	_____
CHEM 12000	GEN I:STRUCTURE/BOND-W/LAB:SM	4	_____
PSYC 10100	GENERAL PSYCHOLOGY	4	_____
<b>Hours</b>		<b>12</b>	
<b>Fall 3 Week</b>			
Hiram Core Requirement		3	_____
<b>Hours</b>		<b>3</b>	
<b>Spring 12 Week</b>			
UCS 20201	ADDRESSING URGENT QUESTIONS	4	_____
CHEM 12100	GEN II:INTR CHEM ANLS-W/LAB:SM	4	_____
NEUR 22700	INTRO TO NEUROSCIENCE	4	_____
<b>Hours</b>		<b>12</b>	
<b>Spring 3 Week</b>			
Hiram Core Requirement		3-4	_____
<b>Hours</b>		<b>3-4</b>	
<b>Second Year</b>			
<b>Fall 12 Week</b>			
Concentration Requirement		4	_____
Hiram Core Requirement		4	_____
Hiram Core Requirement		4	_____
<b>Hours</b>		<b>12</b>	
<b>Fall 3 Week</b>			
Elective, Second Major, Minor Course		3-4	_____
<b>Hours</b>		<b>3-4</b>	
<b>Spring 12 Week</b>			
Concentration Requirement		4	_____
Hiram Core Requirement		4	_____
Elective, Second Major, Minor Course		4	_____
<b>Hours</b>		<b>12</b>	
<b>Spring 3 Week</b>			
Hiram Core Requirement		3-4	_____
<b>Hours</b>		<b>3-4</b>	
<b>Third Year</b>			
<b>Fall 12 Week</b>			
Concentration Requirement		4	_____
Hiram Core Requirement		4	_____
Elective, Second Major, Minor Course		4	_____
<b>Hours</b>		<b>12</b>	
<b>Fall 3 Week</b>			
Hiram Core Requirement		3-4	_____
<b>Hours</b>		<b>3-4</b>	
<b>Spring 12 Week</b>			
UCS 30301	URGENT CHALLENGE SEMINAR:TT	4	_____

Concentration Requirement Elective	4	_____
Hiram Core Requirement	4	_____
<b>Hours</b>		<b>12</b>
<b>Spring 3 Week</b>		
Concentration Requirement Elective	3-4	_____
<b>Hours</b>		<b>3-4</b>
<b>Fourth Year</b>		
<b>Fall 12 Week</b>		
Concentration Requirement Elective	4	_____
Elective, Second Major, Minor Course	4	_____
Elective, Second Major, Minor Course	4	_____
<b>Hours</b>		<b>12</b>
<b>Fall 3 Week</b>		
Elective, Second Major, Minor Course	3-4	_____
<b>Hours</b>		<b>3-4</b>
<b>Spring 12 Week</b>		
NEUR 48000	NEUROSCIENCE CAPSTONE	4
Elective, Second Major, Minor Course	4	_____
Elective, Second Major, Minor Course	4	_____
<b>Hours</b>		<b>12</b>
<b>Spring 3 Week</b>		
Elective, Second Major, Minor Course	3-4	_____
<b>Hours</b>		<b>3-4</b>
<b>Total Hours</b>		<b>120-127</b>