# Major: Computational and Systems Neuroscience
## UG Catalog 2025-2026

## Pathways to General Education Requirements (47 credits)

| | | | |
|---|---|---|---|
| Concept 1F | _____ (3) | _____ (3) | |
| Concept 1A | _____ (3) | | |
| Concept 2 | _____ (3) | _____ (3) | |
| Concept 3 | PSYC 1004 (3) | _____ (3) | |
| Concept 4 | BIOL 1105 (3) | BIOL 1106 (3) | |
| Concept 5F | MATH 1225 (4) | MATH 1226 (4) | |
| Concept 5A | STAT 3615 (3) | | |
| Concept 6A | _____ (3) | | |
| Concept 6D | _____ (3) | | |
| Concept 7 | _____ (3) | | |

## Neuroscience Core Requirements (25 credits)

| | | | |
|---|---|---|---|
| CHEM 1035 | General Chemistry | _____ | (3) |
| CHEM 1036 | General Chemistry | _____ | (3) |
| NEUR 1004 | Neuroscience Orientation Seminar | _____ | (1) |
| NEUR 2025 | Introduction to Neuroscience | _____ | (3) |
| NEUR 2026 | Introduction to Neuroscience | _____ | (3) |
| NEUR 2035 | Neuroscience Laboratory | _____ | (1) |
| NEUR 2036 | Neuroscience Laboratory | _____ | (1) |
| NEUR 3044 | Cell and Molecular Neuroscience | _____ | (4) |
| NEUR 3084 | Cognitive Neuroscience | _____ | (3) |
| NEUR 4044 | Neuroscience Senior Seminar | _____ | (3) |

## Computational and Systems Neuroscience Major Requirements (23 credits)

| | | | |
|---|---|---|---|
| CS 1114 _or_ | Introduction to Software Design | _____ | (3) |
| CS 1064 | Introduction to Programming in Python | | |
| NEUR 3234 | The Artificial Brain | _____ | (3) |
| NEUR 3844 | Computational Neuro & Neur Engineering | _____ | (3) |
| NEUR 4244 | Motor Control: Build, Break, Repair | _____ | (3) |
| PHYS 2305 | Foundation of Physics | _____ | (4) |
| PHYS 2306 | Foundation of Physics | _____ | (4) |
| STAT 3616 | Biological Statistics | _____ | (3) |

## Restricted Electives (12 credits)

| | | | |
|---|---|---|---|
| CHEM 1045 | General Chemistry Lab | _____ | (1) |
| CHEM 1046 | General Chemistry Lab | _____ | (1) |
| CHEM 2535 | Organic Chemistry | _____ | (3) |
| CHEM 2536 | Organic Chemistry | _____ | (3) |
| CHEM 2545 | Organic Chemistry Lab | _____ | (1) |
| CHEM 2546 | Organic Chemistry Lab | _____ | (1) |
| CHEM 4615 | Physical Chemistry | _____ | (3) |
| CHEM 4616 | Physical Chemistry | _____ | (3) |
| CS 2064 | Intermediate Programming in Python | _____ | (3) |
| MATH 2114 | Introduction to Linear Algebra | _____ | (3) |
| MATH 2214 | Introduction to Differential Equations | _____ | (3) |

| | | | |
|---|---|---|---|
| NEUR 2074 | Translational Neuroscience | _____ | (3) |
| NEUR 2364 | Mind Altering Substances from Nature | _____ | (3) |
| NEUR 2464 | Neuroscience and Society | _____ | (3) |
| NEUR 2554 | Experimental Neuroscience | _____ | (3) |
| NEUR 2594 | Exploring Clinical Neuroscience | _____ | (3) |
| NEUR 3034 | Global Perspectives Pre-Departure | _____ | (2) |
| NEUR 3054 | Brain-Body Interactions in Health and Disease | _____ | (3) |
| NEUR 3074 | Evolutionary Neuroscience | _____ | (3) |
| NEUR 3144 | Mechanisms of Learning and Memory | _____ | (3) |
| NEUR 3594 | Neurobiology of Psychiatric Disorders | _____ | (3) |
| NEUR 3604 | Neurobiochemistry | _____ | (3) |
| NEUR 3704 | Human Anatomy & Physio w/ Neuro Focus | _____ | (4) |
| NEUR 3774 | Neuroendocrinology | _____ | (3) |
| NEUR 3914 | Neuroscience of Drug Addiction | _____ | (3) |
| NEUR 3944 | War and the Brain | _____ | (3) |
| NEUR 4034 | Diseases of the Nervous System | _____ | (3) |
| NEUR 4054 | Developmental Neuroscience | _____ | (3) |
| NEUR 4064 | Neuropharmacology | _____ | (3) |
| NEUR 4314 | Genetics in Neuroscience | _____ | (3) |
| NEUR 4364 | Neuroscience of Lang and Comm Disorders | _____ | (3) |
| NEUR 4454 | Neuroeconomics | _____ | (3) |
| NEUR 4514 | Neuroimmunology in Health and Disease | _____ | (3) |
| NEUR 4594 | Clinical Neuroscience in Practice | _____ | (3) |
| NEUR 4814 | Nutritional Neuroscience | _____ | (3) |
| NEUR 4914 | Drug Development in Neuroscience | _____ | (3) |
| NEUR 4994 | Undergraduate Research | _____ | (3) |
| PHYS 4714 | Introduction to Biophysics | _____ | (3) |

**Free Electives (13 credits)** Complete remaining credit hours to satisfy 120 credit hour degree requirement.

| | | | |
|---|---|---|---|
| XXXX XXXX | _____ | _____ | (X) |
| XXXX XXXX | _____ | _____ | (X) |
| XXXX XXXX | _____ | _____ | (X) |
| XXXX XXXX | _____ | _____ | (X) |
| XXXX XXXX | _____ | _____ | (X) |

**Acceptable Substitutions**

| Required Course(s) | Acceptable Substitution(s) |
|---|---|
| CHEM 1035-1036 series | CHEM 1055-1056 series General Chemistry for Majors |
| CHEM 1045-1046 series | CHEM 1065-1066 series General Chemistry Lab for Majors |
| CHEM 2535-2536 series | CHEM 2565-2566 series Principles of Organic Chemistry |
| CHEM 2545-2546 series | CHEM 2555-2556 series Org Syn Tech Lab |
| NEUR 1004 | Any University-approved First Year Experience Course |
| NEUR 3604 | BCHM 2024 Concepts of Biochemistry *or* BCHM 3114 Biochemistry for Biotechnology |
| NEUR 3704 | BMSP 2135 + 2136 + 2145 + 2146 Human Anatomy & Physiology with labs (8) *or* ALS 2304 Comparative Animal Physiology and Anatomy (4) |
| STAT 3615-3616 series | STAT 3005-3006 series or CMDA 2005-2006 series |