

# Michigan State University

## College of Natural Science Bachelor of Science in Neuroscience

### LEGACY CURRICULUM

Requirements for all students who begin the major from 2013 through Summer 2024

#### UNIVERSITY REQUIREMENTS (20 credits)

<b>Tier I Writing</b> (4 credits)	WRA 101 or WRA 195H	Writing as Inquiry Writing as Inquiry Honors
<b>Integrative Studies</b> (16 credits)	IAH 201-210 (lower-level) IAH 211-241 (upper-level) ISS 2XX (200-level) ISS 3XX (300-level)	Integrative Studies Arts & Humanities (lower-level & upper-level)  Integrative Studies Social Sciences (200 and 300-level)

#### Notes about University Requirements

- **University Diversity Distribution Requirement:** Each IAH and ISS course is labeled with (I), (N), or (D). Students must take 2 IAH and/or ISS courses that are in at least 2 of the categories.
- **About Integrated Studies in Biological and Physical Sciences Requirement (ISB/ISP):** ISB & ISP requirements are fulfilled by the required Biology and Chemistry courses as part of the Alternative Track to completion of the Integrated Science University Requirements.
- **For Honors College Students:** Honors College students take WRA 195H, 2 Arts & Humanities (AH) substitutions, and 2 Social Science (SS) Substitutions.
  - IAH and ISS courses must be Honors sections to count towards substitutions.
  - Further questions about your Honors College University Requirements can be directed to Honors College academic advising.

#### BASIC SCIENCE & SOCIAL SCIENCE REQUIREMENTS (39-41 credits)

<b>Calculus &amp; Statistics</b> (6-7 credits)	MTH 124, STT 201/231/421/464 or MTH 132, STT 201/231/421/464 or MTH 152H, STT 201/231/421/464	Survey of Calculus I & Statistics Calculus I & Statistics Honors Calculus I & Statistics
<b>General Chemistry</b> (4 credits)	CEM 141 CEM 161	General Chemistry I (Lecture) General Chemistry Lab I
<b>Biosciences</b> (8 credits)	BS 161, BS 171 BS 162	Cell & Molecular Bio (Lecture & Lab) Organismal & Population Bio (Lecture)
<b>Organic Chemistry</b> (6 credits)	CEM 251, CEM 252	Organic Chemistry I & II
<b>Physics</b> (6 or 8 credits)	PHY 221, PHY 222 or PHY 231/C, PHY 232/C or PHY 183, PHY 184 or PHY 193H, PHY 294H	Physics for Life Scientists I & II Introductory Physics I & II Physics for Scientists & Engineers I & II Honors Physics I & II
<b>Psychology</b> (4 credits)	PSY 101	Introductory Psychology

- **Note:** Honors Chemistry, Biology, and Physics courses are also accepted to complete basic science requirements

## UPPER-LEVEL SCIENCE REQUIREMENTS (37-48 credits)

<b>Neuroscience Core Courses</b> (8 credits)	NEU 301 NEU 302 NEU 311L	Introduction to Neuroscience I Introduction to Neuroscience II Neuroscience Laboratory (W)
<b>Physiology</b> (4 or 8 credits)	PSL 310 or PSL 431, PSL 432	Physiology for Pre-Health Professionals Human Physiology I & II
<b>Biochemistry</b> (4 credits)	BMB 401	Comprehensive Biochemistry
<b>Pharmacology</b> (3 credits)	PHM 350 or PHM 431 or PHM 480 003	Introduction to Human Pharmacology Pharmacology of Drug Addiction Special Problems in Pharmacology
<b>Fundamental Genetics or Eukaryotic Cell Biology</b> (3 or 4 credits)	IBIO 341 or MMG/MGI 409	Fundamental Genetics Eukaryotic Cell Biology
<b>Neuroscience Concentration</b> (complete 15 credits total)	<b>IBIO 313</b> <b>IBIO 341<sup>6</sup></b> <b>IBIO 405</b> <b>IBIO 425</b> KIN 461 LIN 463 NEU 310 <sup>1</sup> NEU 401 NEU 402 NEU 416 <sup>2</sup> <b>NEU 450</b> <b>NEU 460</b> NEU 492 <sup>4</sup> NEU 490 <sup>5</sup> NEU 499 <sup>5</sup> <b>MMG/MGI 404</b> <b>MMG/MGI 409<sup>6</sup></b> PHL 101 <b>PHL 462</b> <b>PHM 422<sup>8</sup></b> <b>PHM 431<sup>7</sup></b> <b>PHM 480 003<sup>3,7</sup></b> PSL 425 PSY 200 PSY 209 <b>PSY 301</b> PSY 302 <b>PSY 333</b> PSY 409 PSY 410 PSY 411 <b>PSY 413</b>	Animal Behavior Fundamental Genetics Neural Basis of Animal Behavior Cells and Development (W) Neural Control of Human Movement Introduction to Cognitive Science Psychology & Biology of Human Sexuality Cellular and Molecular Neuroscience Behavioral and Cognitive Neuroscience Nervous System Development Autonomic Nervous System Cellular & Molecular Neuroscience Techniques Special Topics in Neuroscience Independent Research in Neuroscience Neuroscience Senior Research Thesis Human Genetics Eukaryotic Cell Biology Introduction to Philosophy Philosophy of the Mind Fundamentals of Neuropharmacology Pharmacology of Drug Addiction Special Problems in Pharmacology Physiological Biophysics Cognitive Psychology Brain and Behavior Cognitive Neuroscience Sensation and Perception Neurobiology of Food Intake and Overeating Psychology of Behavioral Development (W) Neurobiology of Learning and Memory (W) Hormones and Behavior (W) Laboratory in Behavioral Neuroscience (W)
<p><i>*NOTE: At least 2 of your concentration courses must be 300 or 400-level</i></p> <p><i>Orange = consistent Fall-only courses</i> <i>Purple = consistent Spring-only courses</i></p> <p><sup>1</sup>NEU 310 = Odd year Fall-only <sup>2</sup>NEU 416 = Even year Fall-only</p> <p><sup>3</sup>PHM 480 003 is ONLY ACCEPTED towards degree requirements in the Spring Semester. Permission to enroll must come from instructor</p> <p><sup>4</sup>NEU 492 requires an override to enroll: <a href="https://overrides.natsci.msu.edu/">https://overrides.natsci.msu.edu/</a></p> <p><sup>5</sup>NEU 490 and NEU 499 require on-campus neuroscience-related research involvement to be able to enroll. No research placement is done for students.</p> <p><sup>6</sup>IBIO 341, MMG/MGI 409, cannot double count as concentration courses AND towards the major's genetics/eukaryotic cell biology requirement. One class cannot double count under two different requirements within the major</p> <p><sup>7</sup>PHM 431 and PHM 480 003 cannot double count as concentration courses AND towards the major's pharmacology requirement. One class cannot double count under two different requirements within the major</p> <p><sup>8</sup>PHM 422 will require <a href="#">an override</a> to enroll</p>		

## ADDITIONAL GRADUATION REQUIREMENTS

<b>Complete a minimum of 120 credits</b>	Complete 11-24 elective credits to reach the minimum 120 credits
<b>Earn a minimum cumulative GPA of 2.00 or higher</b>	The cumulative GPA is calculated using numerical grades earned in all coursework taken at MSU
<b>Earn a minimum major GPA of 2.00 or higher</b>	The major GPA is calculated using all MSU numerical grades earned in the upper-level science requirements, BS 162, CEM 251, CEM 252, and PSY 101
<b>Complete a minimum of 30 credits at the 300-level or above</b>	This is a College of Natural Science requirement.
<b>Complete a minimum of 30 credits at MSU with a minimum of 27 credits on the East Lansing campus after reaching junior credit standing</b>	Junior credit standing is defined by reaching a minimum of 56 cumulative credits
<b>No more than 60 credits from a 2-year community college can be transferred back to MSU</b>	
<b>Courses used to satisfy degree requirements cannot be taken under the CR/NC grading system</b>	Exceptions were made for this rule only during the Spring 2023 semester
<b>No more than 10 of the last 30 total credits toward a degree may be transferred back from another institution without approval</b>	Speak with your academic advisor(s) if you have further questions about this

### Questions? Contact the Department of Physiology Academic Advising

- Department of Physiology Academic Advising Email: [neupslugrad@msu.edu](mailto:neupslugrad@msu.edu)
- Office: Biomedical Physical Sciences Building (567 Wilson Road, Room 2240)
- Current Students: Schedule an advising appointment using <https://student.msu.edu>
- Prospective Students: Contact NatSci Undergraduate Recruitment at [natsci.explore@msu.edu](mailto:natsci.explore@msu.edu)