

# B.S. NEUROSCIENCE

DEGREE REQUIREMENTS  
LYMAN BRIGGS COLLEGE  
MICHIGAN STATE UNIVERSITY

[physiology.natsci.msu.edu/academics/undergraduate/  
bachelor-of-science-in-neuroscience/](http://physiology.natsci.msu.edu/academics/undergraduate/bachelor-of-science-in-neuroscience/)



DEPARTMENT OF  
PHYSIOLOGY

## UNIVERSITY & LYMAN BRIGGS REQUIREMENTS

### WRITING: One of the Following Courses

1. LB 133 (4) - Introduction to History, Philosophy, and Sociology of Science

**University Diversity Distribution:** For IAH and ISS courses, students must take at least one course focused on a National (N) topic and one course focused on an International (I) or Multicultural (D) topic.

**NOTE:** 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.

**NOTE:** Beginning Spring 2017, LB 32XA courses will satisfy the upper-level IAH university requirement. LB 32XB courses will satisfy the ISS 300-level university requirement. Also applies to Honors College students

**NOTE:** HPS A & B will count as 1 AH Sub and 1 SS Sub respectively. Honors College students must take 1 more Arts & Humanities (AH) substitution & 1 more Social Science (SS) Substitution.

### INTEGRATIVE STUDIES: IAH, ISS, LB32XA/B - All of the Following

1. IAH 201-210 (4) Arts & Humanities
2. LB32XA (4) - History, Philosophy, and Sociology of Science Arts & Humanities
3. ISS 200-level (4) Social Science
4. LB 32XB (4) - History, Philosophy, and Sociology of Science Social Science

### LYMAN BRIGGS SENIOR SEMINAR

1. LB 492 (4) - Senior Seminar (W)

## BASIC SCIENCE & SOCIAL SCIENCE REQUIREMENTS

*Courses denoted with the (\*) are recommended from the list of options* **BIOLOGY:** One of the following sets

### CALCULUS & STATISTICS: One of the following pairs

1. **\*LB 118 (4) & STT 231 (3)**
  - a. Calculus I & Statistics for Scientists
2. MTH 132 (3) & STT 231 (3)
  - a. Calculus I & Statistics for Scientists
3. MTH 152H (3) & STT 231 (3)
  - a. Honors Calculus I & Statistics for Scientists

### GENERAL CHEMISTRY: One of the following sets

1. **\*LB 171 (4), LB 171L (1), LB 172 (3) & LB 172L (1)**
  - a. Principles of Chemistry I & Principles of Chemistry Lab I
  - b. Principles of Chemistry II & Principles of Chemistry Lab I
2. CEM 141 (4), CEM 161 (1), CEM 142 (3), CEM 162 (1)
  - a. General Chemistry & General Chemistry Lab I
  - b. General and Inorganic Chemistry & Chemistry Lab II
3. CEM 151 (4), CEM 161 (1); CEM 152 (3), CEM 162 (1)
  - a. General Descriptive Chemistry & Gen. Chemistry Lab I
  - b. Principles of Chemistry & Chemistry Lab II
4. CEM 181H (4), CEM 185H (2), CEM 182H (3)
  - a. Honors Chemistry & Honors Chemistry Lab
  - b. Honors Chemistry II

### INTRODUCTORY PSYCHOLOGY

1. PSY 101 (4) - Introductory Psychology

1. **\*LB 144 (4) & LB 145 (5)**

- a. Organismal Biology & Cellular and Molecular Biology
2. BS 161 (3), BS 171 (2), BS 162 (3), BS 172 (2)
    - a. Cell and Molecular Biology, Organismal and Population Biology with Labs
  3. BS 181H (3), BS 191H (2), BS 182H (3), BS 192H (2)
    - a. Honors Cell and Molecular Biology, Honors Organismal & Population Biology with Labs

### ORGANIC CHEMISTRY: One of the following pairs

1. **\*LB 271 (3) & CEM 252 (3)**
  - a. Organic Chemistry & Organic Chemistry II
2. **\*CEM 251 (3) & CEM 252 (3)**
  - a. Organic Chemistry I & II
3. CEM 351 (3) & CEM 352 (3)
  - a. Organic Chemistry I & II

### PHYSICS: One of the following pairs (labs required)

1. **\*LB 273 (4) & LB 274 (4)**
  - a. Physics I & Physics II (Labs Included)
2. PHY 221 (4) & PHY 222 (4)
  - a. Studio Physics for Life Scientists I & II (Labs Included)
3. PHY 231/C (3), PHY 251 (1), PHY 232/C (3), PHY 252 (1)
  - a. Introductory Physics I & II with Labs
4. PHY 183/B (4), PHY 191 (1), PHY 184/B (4), PHY 192 (1)
  - a. Physics for Scientists and Engineers I & II with Labs
5. PHY 193H (4), PHY 191 (1), PHY 294H (4), PHY 192 (1)
  - a. Honors Physics I-Mechanics, Physics II-Electromagnetism with Labs

# UPPER DIVISION SCIENCE COURSES

*Courses denoted with the (\*) are recommended from the list of options*

**NEUROSCIENCE CORE COURSES:** All of the following courses

1. NEU 301 (3) - Introduction to Neuroscience I
2. NEU 302 (3) - Introduction to Neuroscience II
3. NEU 311L (2) - Neuroscience Laboratory (W)

**PHYSIOLOGY:** One of the following pairs

1. **\*PSL 310 (4)** - Physiology for Pre-Health Professionals
2. PSL 431 (4) & PSL 432 (4)
  - a. Human Physiology I & II

**BIOCHEMISTRY**

1. BMB 401 (4) - Comprehensive Biochemistry

**PHARMACOLOGY:** One of the following

1. PHM 350 (3) - Fundamentals of Human Pharmacology
2. PHM 431 (3) - Pharmacology of Drug Abuse
3. ^PHM 480 003 (3) - Special Problems (Spring ONLY)

*^Prior Approval from Neuroscience Academic Advisor is REQUIRED*

**FUNDAMENTAL GENETICS OR EUKARYOTIC CELL**

**BIOLOGY:** One of the following courses

1. IBIO 341 (4) - Fundamental Genetics
2. MMG 409 (3) - Eukaryotic Cell Biology

## NEUROSCIENCE CONCENTRATION COURSES

*Complete 15 credits in ONE of the three concentrations (continued on the next page)*

### CELLULAR AND DEVELOPMENTAL

IBIO 341 (4) - Fundamental Genetics  
IBIO 425 (4) - Cells & Development (W)  
MMG 404 (3) - Human Genetics  
MMG 409 (3) - Eukaryotic Cell Biology  
NEU 416 (3) - Development of the Nervous System  
NEU 417 (3) - Instrumental Methods of Analysis in Neuroscience  
NEU 420 (3) - Neurobiology of Disease  
NEU 440 (3) - Synaptic Transmission  
NEU 450 (3) - Autonomic Nervous System  
NEU 460 (3) - Current Approaches in Cellular & Molecular Neuroscience  
^NEU 490 (3) - Special Problems in Neuroscience (Independent Study/Research in Neuroscience)  
^NEU 492 (3) - Special Topics in Neuroscience  
^NEU 499 (3) - Neuroscience Senior Research Thesis  
PHM 422 (2) - Fundamentals of Neuropharmacology  
PHM 431 (3) - Pharmacology of Drug Abuse  
^PHM 480 003 (3) - Special Problems (Spring ONLY)

*^Prior Approval from Neuroscience Academic Advisor is REQUIRED*

*^NEU 492 has multiple sections and requires an override to enroll: <https://overrides.natsci.msu.edu>*

**NOTE:** MMG 409 and IBIO 341 cannot double count towards the concentration & the general genetics/eukaryotic cell biology requirement

**NOTE:** PHM 431 and PHM 480 003 cannot double count towards the concentration & the general PHM requirement

### COGNITIVE AND COMPUTATIONAL

LIN 455 (3) - Neurolinguistics  
LIN 463 (3) - Introduction to Cognitive Science  
NEU 417 (3) - Instrumental Methods of Analysis in Neuroscience  
^NEU 490 (3) - Special Problems in Neuroscience (Independent Study/Research in Neuroscience)  
^NEU 492 (3) - Special Topics in Neuroscience  
^NEU 499 (3) - Neuroscience Senior Research Thesis  
PHL 101 (3) - Introduction to Philosophy  
PHL 462 (3) - Philosophy of the Mind  
PSY 200 (3) - Cognitive Psychology  
PSY 209 (3) - Brain and Behavior  
PSY 301 (3) - Cognitive Neuroscience  
PSY 302 (3) - Sensation and Perception  
PSY 401 (3) - Expertise and Skill (W)  
PSY 410 (3) - Neurobiology of Learning and Memory (W)

*^Prior Approval from Neuroscience Academic Advisor is REQUIRED*

*^NEU 492 has multiple sections and requires an override to enroll: <https://overrides.natsci.msu.edu>*

**NOTE:** Effective Fall 2021, PSY 302 is no longer a Tier II Writing Course (W)

**NOTE:** Effective Fall 2023, we are no longer accepting PSY 493 towards the concentration

Connect with your Neuroscience Academic Advisor to further discuss computational course options

# NEUROSCIENCE CONCENTRATION COURSES (CON'T)

## BEHAVIORAL AND SYSTEMS

IBIO 313 (3) - Animal Behavior  
IBIO 405 (3) - Neural Basis of Animal Behavior  
NEU 310 (3) - Psychology & Biology of Human Sexuality  
NEU 416 (3) - Development of the Nervous System  
NEU 417 (3) - Instrumental Methods of Analysis in Neuroscience  
NEU 420 (3) - Neurobiology of Disease  
NEU 440 (3) - Synaptic Transmission  
NEU 450 (3) - Autonomic Nervous System  
NEU 460 (3) - Current Approaches in Cellular & Molecular Neuroscience  
^NEU 490 (3) - Special Problems in Neuroscience (Independent Study/Research in Neuroscience)  
^NEU 492 (3) - Special Topics in Neuroscience  
^NEU 499 (3) - Neuroscience Senior Research Thesis  
PHM 422 (2) - Fundamentals of Neuropharmacology  
PHM 431 (3) - Pharmacology of Drug Abuse  
^PHM 480 003 (3) - Special Problems (Spring ONLY)  
PSY 209 (3) - Brain and Behavior  
PSY 302 (3) - Sensation and Perception  
PSY 333 (3) - Neurobiology of Food Intake and Overeating  
PSY 409 (3) - Psychology of Behavioral Development (W)  
PSY 410 (3) - Neurobiology of Learning and Memory (W)  
PSY 411 (3) - Hormones and Behavior (W)  
PSY 413 (4) - Laboratory in Behavioral Neuroscience (W)

*^Prior Approval from Neuroscience Academic Advisor is REQUIRED*

*^NEU 492 has multiple sections and requires an override to enroll: <https://overrides.natsci.msu.edu>*

**NOTE:** PHM 431 and PHM 480 003 cannot double count towards the concentration & the general PHM requirement

**NOTE:** Effective Fall 2021, PSY 302 is no longer a Tier II Writing Course (W)

**NOTE:** Effective Fall 2023, we are no longer accepting PSY 493 towards the concentration

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## ADDITIONAL GRADUATION REQUIREMENTS

### *In addition to completing all degree requirements*

- Complete a minimum of 120 credits
- Earn a minimum cumulative GPA of 2.0 or better
- Earn a minimum major GPA of 2.0 or better
- Complete a minimum of 30 credits at MSU with a minimum of 27 credits on the East Lansing campus after reaching junior standing (56+ credits)
- No more than 10 of the last 30 credits may be transferred from another 4-year or 2-year institution. PRIOR APPROVAL IS REQUIRED.
- No more than 60 credits from a community college will be allowed
- Courses used to satisfy specific degree requirements cannot be taken as C/NC

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## WE'RE HERE TO SERVE YOU! CONTACT US

### Department of Physiology Academic Advising Office

Biomedical Physical Sciences Building  
567 Wilson Road, Room 2240  
East Lansing, MI 48824  
517-884-5000

#### **Ashley Maloff, M.Ed.**

Academic Advisor, Neuroscience  
Email: maloffas@msu.edu  
Phone:

#### **Becky La, M.A.**

Academic Advisor, Neuroscience  
Email: labecky@msu.edu  
Phone: 517-355-4114

### Lyman Briggs College Academic Advising Office

East Holmes Hall  
919 E. Shaw Lane  
East Lansing, MI 48825

#### **Lyman Briggs Academic Advisors**

<https://lbc.msu.edu/advising/index1.html>

Phone: 517-353-6480  
Email: lbc.advising@msu.edu

#### **L. Karl Olson, Ph.D.**

Undergraduate Program Director  
Email: olsonla@msu.edu  
Phone: 517-884-5116