# NEUROSCIENCE BS (120 hrs) Effective 2019

| NAME | PID | Optional 2nd Major or Minor |
|---|---|---|
| | | |

## FOUNDATIONS

Math PL

| English Comp. and Rhetoric | Foreign Language* | | Quant. Reas. (QR) | Lifetime Fitness (LFIT) |
|---|---|---|---|---|
| ENGL 105 | 1. | 3. | MATH 231 | (1 hr) |
| | 2. | 4. | | |

*** Through Level 3**

## APPROACHES

| Phys. and Life Sciences (PL/PX) ** | Social and Behavioral Sciences*** | Humanities/Fine Arts |
|---|---|---|
| PSYC 101 | Hist. Analysis (HS): | Vis. & Perf. Arts (VP): |
| | Soc.Sci./Hist. Analysis (SS/HS): | Literary Arts (LA): |
| BIOL 101<br>BIOL 101L | Soc.Sci./Hist. Analysis (SS/HS): | Phil. Reasoning (PH): |

**** C or better in BIOL 101 and CHEM 101 or CHEM 102 before taking BIOL 201 or 202 ***From at least two departments**

## CONNECTIONS

| Communication Int. (CI) | Quant. Int. (QI) or 2nd Quant. Reas. (QR) | Experiential Ed. (EE) | Global Issues (GL) |
|---|---|---|---|
| BIOL 101L | **MATH 232** | CHEM 262L | |
| **US Diversity (US)** | **North Atlantic World (NA)** | **World before 1750 (WB)** | **Beyond the NA (BN)** |
| | | | |

## MAJOR/MINOR/ELECTIVES

| NEUROSCIENCE ♦ Major Core Courses | Additional Requirements | Optional Minor | Electives/Minor | Electives | Electives |
|---|---|---|---|---|---|
| NSCI 175* (3) | PSYC 101 | | | | |
| PSYC 210 (4) or STOR 155 (3) | PHYS 104, 114, 116 or 118 (4) | | | | |
| PSYC 270 (4) | PHYS 105, 115, 117, or 119 (4) | | | | |
| NCSI 222 (3) | CHEM 101<br>CHEM 101L | | | | |
| NSCI 225 (3) | CHEM 102<br>CHEM 102L | | | | |
| Knowledge Electives (6 cr hrs) | CHEM 241<br>CHEM 241L | | | | |
| | CHEM 261 | | | | |
| | CHEM 262<br>CHEM 262L | | | | |
| Mathematics, Methods, and Statistics Electives (6 cr hrs) | COMP 116 | | | | |
| | BIOL 101<br>BIOL 101L | | | | |
| | MATH 231 | | | | |
| | MATH 232 | | | | |
| | BIOL 202 | | | | |

♦ 18 hours ≥ C (not C-) required in major core.
♦ Students must have a cumulative GPA of 2.0 or higher in core courses.

*C or better required in NCSI 175

**Remaining courses after this term:**

| | | |
|---|---|---|
| ____ | Foundations | ____ |
| ____ | Approaches | ____ |
| ____ | Connections | ____ |
| ____ | Supplemental | ____ |
| ____ | First Major (hrs C____) | ____ |
| ____ | Major/Minor (hrs C____) | ____ |
| ____ | Minor (hrs C____) | ____ |
| | Requirements subtotal | 0 |
| ____ | Electives/Other | ____ |
| | **Total** | 0 |

**Hours to be deducted:**

| | |
|---|---|
| Repeated courses | ____ |
| HSFL | ____ |
| Online courses > 24 | ____ |
| Other | ____ |
| Professional School > 30 | ____ |
| Hours in subject (BA) > 45 | ____ |
| Total | 0 |

**Hours Tally:**

| | |
|---|---|
| Hours to date: | ____ |
| Hours in progress | ____ |
| Pending Study Abroad* | ____ |
| Subtotal | 0 |
| Hours deducted | 0 |
| Hours after this term | 0 |
| Hours remaining to grad | ____ |
| Semesters left | ____ |

***Pending study abroad hours may differ from hours earned.***

**Notes:**

**This tally assumes successful completion of presently enrolled courses (not AB or IN), and it does not account for all possible overlaps**

August 8, 2019

## **Knowledge Electives** (6 credit hours)

## **Mathematics, Methods, and Statistics Electives** (6 credit hours)

**All course are three credit hours unless otherwise noted**

BIOL 205 Cellular and Developmental Biology (4)
BIOL 425 Human Genetics
BIOL 450 Introduction to Neurobiology
BIOL 455 Behavioral Neuroscience
BIOL 458 Sensory Neurobiology and Behavior
BIOL 542 Light Microscopy for the Biological Sciences
BIOL 552 Behavioral Endocrinology
BIOL 553 Mathematical and Computational Models in Biology
CHEM 430 Introduction to Biological Chemistry
COMP 401 Foundation of Programming (4)
COMP 410 Data Structures
COMP 411 Computer Organization (4)
COMP 555 Bioalgorithms
COMP 560 Artificial Intelligence
COMP 562 Introduction to Machine Learning
COMP 576 Mathematics for Image Computing
COMP 581 Introduction to Robotics
COMP 631 Computer Networks
COMP 633 Parallel and Distributed Computing
COMP 651 Computational Geometry
COMP 665 Images, Graphics, and Vision
EXSS 175 Human Anatomy
EXSS 275L Human Anatomy Laboratory (1)
EXSS 276 Human Physiology
EXSS 380 Neuromuscular Control and Learning
NSCI 320 Neuropsychopharmacology
NSCI 325 Neuroscience of Psychiatric Disorders
NSCI 401 Animal Behavior
NSCI 405 Advanced Molecular Neuropharmacology
NSCI 415 History of Neuroscience
NSCI 420 Functional Neuroanatomy
NSCI 421 Principles of Brain Circuits
NSCI 422 Genetics of Brain Diseases
NSCI 423 Neurotechnology in Modern Neuroscience Research
NSCI 424 Neural Connections: Hands on Neuroscience
NSCI 427 Neurobiology of Aging
NSCI 428 Neuroscience, Society, and the Media
NSCI 434 Cognitive Neuroscience
NSCI 437 Neurobiology of Learning and Memory
NSCI 507 Autism
NSCI 568 Emotion
NSCI 571 Social Neuroscience
NSCI 573 Neuropsychobiology of Stress
PHYS 133 How Bio Works
PHYS 405 Biological Physics
PSYC 245 Psychopathology
PSYC 404 Clinical Psychopharmacology
PSYC 469 Evolution and Development of Biobehavioral Systems
PSYC 559 Applied Machine Learning in Psychology
PSYC 602 Evolutionary Psychology

BIOL 226 Mathematical Methods for Quantitative Biology
BIOL 226L Mathematical Methods for Quantitative Biology Laboratory (1)
BIOS 500H Introduction to Biostatistics
BMME 350 Electronics for Biomedical Engineers (4)
BMME 351 Human Physiology and Biological Measurements for Engineers (4)
BMME 445 Systems Neuroscience
BMME 550 Medical Imaging I: Ultrasonic, Optical, and Magnetic Resonance Systems
COMP 283 Discrete Structures[2]
MATH 233 Calculus of Functions of Several Variables (4)
MATH 381 Discrete Mathematics[2]
MATH 383 First Course in Differential Equations
MATH 383L First Course in Differential Equations Laboratory (1)
MATH 523 Functions of a Complex Variable with Applications
MATH 528 Mathematical Methods for the Physical Sciences I
MATH 528L Laboratory for Mathematical Methods for the Physical Sciences I (1)
MATH 529 Mathematical Methods for the Physical Sciences II
MATH 529L Laboratory for Mathematical Methods for the Physical Sciences II (1)
MATH 535 Introduction to Probability
MATH 547 Linear Algebra for Applications
MATH 555 Introduction to Dynamics
MATH 564 Mathematical Modeling in the Life Sciences
MATH 566 Introduction to Numerical Analysis
MATH 577 Linear Algebra
MATH 661 Scientific Computation I
MATH 662 Scientific Computation II
MATH 668 Methods of Applied Mathematics I
MATH 669 Methods of Applied Mathematics II
NSCI 275 Neuroscience Research Methods (4)
NSCI 403 Advanced Biopsychology Laboratory
PSYC 533 The General Linear Model in Psychology
STOR 215 Foundations of Decision Sciences[2]
STOR 415 Introduction to Optimization
STOR 435 Introduction to Probability
STOR 445 Stochastic Modeling
STOR 455 Statistical Methods I
STOR 555 Mathematical Statistics
STOR 556 Advanced Methods of Data Analysis
STOR 565 Machine Learning

[2] ***Students may take one of COMP 283, MATH 381, or STOR 215***