A Neuroscience Major leads to a Bachelor of Arts in Neuroscience.
A major in Neuroscience requires a minimum of 30 hours in neuroscience coursework with grades of C- or better. At least 18 of these hours must be in upper-division coursework.
Twelve hours of upper-division coursework for the major must be completed on the Boulder Campus.
No more than 45 hours in neuroscience courses will apply toward graduation. The only exception to the 45-hour limit is coursework for honors seminars and thesis (NRSC 4001 and 4011, but only up to six hours). Any course that is cross-listed with several departments will count in the department in which the student has the most hours, regardless of how the student registers for the course.
The grade point average of all work in neuroscience (not including ancillary requirements) must be at least a 2.0.

A grade of D in a required neuroscience course will not fulfill the requirement, although the credit hours will count toward graduation. If a student receives a grade of D in a required course, he or she must receive a C- or better on an alternative course that meets the requirement, or retake the course and earn a C- or better (and receive zero college credit because the student has already received credit for the D).

**Neuroscience Major required courses (credits are in parentheses)**

**Ancillary Foundation Courses (23 cr; do not count toward major hours or major GPA):**

1. Ancillary Molecular Biology requirement (complete one of the following):
   - MCDB 1150 with 1151 or 1161 or 1171 or 2171 (4-5) – Intro to MCD with Lab
   *the above is the preferred and recommended choice. Taking one of the 2-credit labs also covers the lab in requirement #7*
   - EBIO 1210 with 1230 (4) – General Biology 1 with Lab
2. Ancillary Calculus requirement (complete one of the following):
   - MATH 1300 (5) – Analytical Geometry and Calculus I
   - MATH 1310 (5) – Calculus, Systems and Modeling
3. Ancillary General Chemistry sequence requirement (complete one of the following sequences):
   - CHEM 1113 with 1114 (5) and CHEM 1133 with 1134 (5) – General Chemistry 1 and 2 with Labs
   - BCHM/CHEM Majors: the for-majors CHEM courses count. Discuss with your NRSC advisor.
4. Ancillary Organic Chemistry requirement (complete one of the following):
   - CHEM 3311 (4) Organic Chemistry 1
   - CHEM 3351 (4) or CHEM 3451 (4) Organic Chemistry I for BCHM/CHEM Majors
   *Students planning graduate/medical school, or work in the biotechnology industry should plan to take CHEM 3311 and CHEM 3341, Organic Chemistry II with Lab. Students should verify program requirements for any additional Chemistry pre-requisites.*

**Lower Division Neuroscience Major Requirements (13-14 cr; count towards major hours and GPA):**

5. NRSC 2100 (4) – Introduction to Neuroscience (EBIO 1210 or MCDB 1150 is the pre-requisite)
6. NRSC 2200 (2) – Laboratory Techniques in Neuroscience (NRSC 2100 is the pre-requisite)
7. Complete one of the following Genetics courses (completion of requirement #1 is a pre-requisite):
   - MCDB 2150 with 2151 or 1161 or 1171 or 2171 (4-5) – Principles of Genetics with Lab (*preferred*)
   - EBIO 2070 (4) - Genetics: Molecules to Populations (check pre-requisites)
8. Statistics/Computation requirement (complete one of the following; first check pre-requisites):
   - IPHY 2800 (4) – Introduction to Statistics
   - EBIO 1010 (3) – Introduction to Quantitative Thinking for Biologists
   - ECON 3818 (4) – Introduction to Statistics with Computer Applications
   - MATH 2510 (3) – Introduction to Statistics
   - PSYC 3101 (4) – Statistics and Research Methods in Psychology (*final semester offered: SU 2015*)
   - PSYC 2111 (4) – Psychological Sciences I: Statistics (*replaces PSYC 3101 starting FA 2015*)
   - BCOR 1020 (3) – Business Statistics

*Discuss planning of upper-division neuroscience course work with your advisor.*
Upper Division Neuroscience major requirements (21-22 cr; count towards major hours and GPA):
9. Complete MCDB 3135 (3) – Molecular Cell Biology 1 (check pre-requisites)

10. Complete at least three of the following Neuroscience Core courses (check pre-requisites for each):
   - NRSC 4032* (3) – Neurobiology of Learning and Memory
   - NRSC 4052* (4) – Behavioral Neuroscience
   - NRSC 4072* (3) – Clinical Neuroscience
   - NRSC 4082 (3) – Neural Circuits of Learning
   - NRSC 4092* (3) – Behavioral Neuroendocrinology
   - NRSC 4132* (3) – Neuropharmacology

11. Complete at least 9 hours of upper division elective coursework by taking additional courses from requirement #10 (see above) or from the following Psychology and Neuroscience and General Science courses, with a maximum of 6 credit hours taken outside of Psychology and Neuroscience (please check all pre-requisites and co-requisites before enrolling in courses):

   Psychology and Neuroscience
   - NRSC 4011 (3) – Senior Thesis
   - NRSC 4015 (3) – Affective Neuroscience
   - NRSC 4062* (3) – Neurobiology of Stress
   - NRSC 4155/PSYC 4155 (4) – Cognitive Neuroscience/Neuropsychology
   - NRSC 4542 (3) – Neurobiology of Mental Illness
   - PSYC 3005 (3) – Cognitive Science
   - PSYC 4122 (3) – Brain Injury, Plasticity and Recovery: From Neuron to Behavior
   - PSYC 4142 (3) – Brain Injury, Plasticity and Recovery: From Neuron to Behavior
   - PSYC 4155 (4) – Psychology of Perception
   - PSYC 4175 (4) – Computational Cognitive Neuroscience

   Neuroscience/Neuropsychology
   - NRSC 4545 (3) – Neurobiology of Addiction
   - NRSC 4544 (3) – Neurobiology of Mental Illness

   General Science courses outside PSYC and NRSC
   - CHEM 4611 (3) – Survey of Biochemistry
   - CHEM 4700 (4) – Foundations of Biochemistry
   - CHEM 4700 (4) – Foundations of Biochemistry
   - CHEM 4700 (4) – Foundations of Biochemistry
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   - CHEM 4700 (4) – Foundations of Biochemistry

   Electrical and Chemical Engineering
   - ECEN 3030 (3) – Electrical/Electronic Circuits Non-Major
   - ECEN 4120 (3) – Neural Network Design
   - ECEN 4811 (3) – Neural Signals and Functional Brain Imaging

   Ecology & Evolutionary Biology
   - EBIO 3240 (4) – Animal Behavior

   Integrative Physiology
   - IPHY 3410 (3) – Human Anatomy
   - IPHY 3430 (3) – Introduction to Human Physiology
   - IPHY 3470 (3) – Human Physiology 1
   - IPHY 4200 (3) – Physiological Genetics and Genomics
   - IPHY 4580 (3) – Sleep Physiology
   - IPHY 4720 (4) – Neurophysiology

   Molecular, Cellular & Developmental Biology
   - MCDB 3140 (2) – Cell Biology Lab
   - MCDB 3280 (3) – Molecular Cell Physiology
   - MCDB 4201 (3) – From Bench to Bedside: The Role of Science in Medicine
   - MCDB 4426 (3) – Cell Signaling and Developmental Regulation
   - MCDB 4440 (3) – Cellular Basis of Disease
   - MCDB 4680 (3) – Mechanisms of Aging
   - MCDB 3651 (3) – The Brain: Dysfunction to Disease

   Neural Systems & Physiological Control
   - ECEN 4821 (3) – Neural Systems & Physiological Control
   - ECEN 4831 (3) – Brains, Minds, and Computers

   Animal Behavior
   - EBIO 3240 (4) – Animal Behavior

   Human Anatomy
   - IPHY 3410 (3) – Human Anatomy
   - IPHY 3430 (3) – Introduction to Human Physiology

   Human Physiology 1
   - IPHY 3470 (3) – Human Physiology 1
   - IPHY 4200 (3) – Physiological Genetics and Genomics
   - IPHY 4580 (3) – Sleep Physiology

   Sleep Physiology
   - IPHY 4580 (3) – Sleep Physiology
   - IPHY 4720 (4) – Neurophysiology

* If these courses were taken under their prior PSYC heading (i.e. PSYC4032), they still apply to the major.

College of Arts and Sciences Degree Requirements
In addition to the basic Arts & Sciences requirements (foreign language, MAPS, College Core Curriculum, etc.), candidates for the Bachelor of Arts degree must fulfill the following minimum college requirements:

1. A total of 120 hours passed. Only 45 hours from any one department can contribute to this total. (Up to 6 hours of designated departmental honors courses are exempted from this maximum.)
2. 45 semester hours of upper-division work (courses numbered in the 3000’s to 4000’s)
3. Minimum 2.0 GPA overall and in the major.
4. Completion of 45 hours at the University of Colorado at Boulder, 30 of which must be upper division in the College of Arts and Sciences after matriculation.
5. The requirements for the student’s major as set by the department.

Drafted: 8/27/11 (Updated: 06/02/2016)