UNIVERSITY OF COLORADO BOULDER NEUROSCIENCE MAJOR
(For students declaring a Neuroscience major through December 2013)

• 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 course work.
• Twelve hours of upper-division course work 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 (do not count toward major hours or major GPA):
1. Ancillary Molecular Biology requirement (complete one of the following):
   - EBIO 1210 with 1230 (4) – General Biology 1 with Lab
   - MCDB 1150 with 1151 or 1161 or 1171(4) – Introduction to Cellular & Molecular Biology & Lab
   - CHEN 2810 (3) – Biology for Engineers (Neuroscience Majors who use this class to meet this requirement must also take CHEN3010 and 3130 to fulfill requirement #6 - see below)

2. Ancillary Calculus requirement (complete one of the following):
   - MATH 1300 (5) – Analytical Geometry and Calculus 1
   - MATH 1310 (5) – Calculus, Systems and Modeling
   - APPM 1350 (4) – Calculus 1 for Engineers (APPM 1710 is a co-requisite)
   - APPM 1340 (3) and 1345 (3) – Calculus 1, Part A and Calculus 1, Part B

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
   - CHEM 1251 (5) and 1271 (5) – General Chemistry 1 and 2 for Chemistry and Biochemistry tracks

   * CHEN1211 (4) with CHEM1221 (1) – General Chemistry for Engineers with Lab may be substituted for a Chemistry 1 course with Lab in any of the sequences

Lower Division Neuroscience major requirements (count towards major hours and major GPA):
4. Complete one of the following Genetics courses (completion of requirement #1 is a pre-requisite):
   - MCDB 2150 with 2151 or 2161 or 2171 (4) – Principles of Genetics with Lab
   - EBIO 2070 (4) - Genetics: Molecules to Populations (check pre-requisites)
   - CHEN 2820 (3) – Foundations in Bioengineering

5. NRSC 2100 (4) – Introduction to Neuroscience 1 (EBIO 1210 or MCDB 1150 is the pre-requisite)

6. 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)
   - APPM 1710 (3) – Tools and Methods for Engineering Computing
   - APPM 2750 (4) – Java: Training and Mathematical Algorithms
   - CHEN 3010 (3) – Applied Data Analysis and CHEN 3130 – Chemical Engineering Lab 1
   - BCOR 1020 (3) – Business Statistics

Please refer to back for further requirements
It is recommended that Neuroscience students complete areas #1-6 before attempting upper division requirements. (Discuss planning of upper-division neuroscience course work with your advisor)

**Upper Division Neuroscience major requirements (count towards major GPA):**

1. Complete MCDB 3135 (3) – Molecular Cell Biology 1 (check pre-requisites)
   
   (MCDB 3120 (3) – Cell Biology or MCDB 3500 (3) – Molecular Biology, which were offered prior to Summer 2010, may be substituted for this requirement)

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

9. Complete 12 hours by taking additional courses from requirement 8 above or from the following Neuroscience and General Science electives (please check all pre-requisites and co-requisites before enrolling in courses):

<table>
<thead>
<tr>
<th>Neuroscience</th>
<th>General Science</th>
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<tbody>
<tr>
<td>PSYC 3005 (3) – Cognitive Science</td>
<td>CHEM 4700 (4) – Foundations of Biochemistry</td>
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<tr>
<td>NRSC 4011 (3) – Senior Thesis/ Research Ethics</td>
<td>ECEN 3030 (3) – Electrical/Electronic Circuits Non-Major</td>
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<td>NRSC 4015 (3) – Affective Neuroscience</td>
<td>CHEM 3301 (5) with 3321 (5) – Organic Chemistry 1 with Lab</td>
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<td>NRSC 4062* (3) – Neurobiology of Stress</td>
<td>EBI 3010 (3) – Animal Behavior</td>
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<td>NRSC 4155/PSYC 4155 (4) – Cognitive Neuroscience</td>
<td>EBI 3770 (4) – Animal Diversity: Vertebrates</td>
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<tr>
<td>Neuroscience/Neuropsychology</td>
<td>PSYC 4175 (4) – Computational Cognitive Neuroscience</td>
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<td>PSYC 4165 (4) – Psychology of Perception</td>
<td>EBI 3850 (4) – Animal Diversity: Invertebrates</td>
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<tr>
<td>PSYC 4175 (4) – Computational Cognitive Neuroscience</td>
<td>IPHY 3410 (3) – Human Anatomy</td>
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<tr>
<td>Neuroscience</td>
<td>IPHY 4360 (3) – Introduction to Human Physiology</td>
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<td>NRSC 4542 (3) – Neurobiology of Mental Illness</td>
<td>IPHY 3470 (3) – Human Physiology 1</td>
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<td>NRSC 4545 (3) – Neurobiology of Addiction</td>
<td>IPHY 4200 (3) – Physiological Genetics and Genomics</td>
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<td>NRSC 4561 (2-3) – Special Topics in Neuroscience</td>
<td>CHEM 4710 (4) – Neurophysiology</td>
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<td>NRSC 4911 (3) – Teaching of Neuroscience</td>
<td>MCD 3140 (2) – Cell Biology Lab</td>
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<td>CHEM 3311 with 3321 (5) – Organic Chemistry 1 with Lab</td>
<td>MCD 3280 (3) – Molecular Cell Physiology</td>
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<td>for Chemistry and Biochemistry Majors with Lab</td>
<td>MCD 3651 (3) – The Brain: Dysfunction to Disease</td>
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<td>CHEM 4611 (3) – Survey of Biochemistry</td>
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* 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.

Effective August 22, 2011 - (updated 2/04/2016)