To Be Adopted:

Proposed Changes in Requirements for the Neuroscience Major

PRESENT

NEUROSCIENCE

B. Glenn Stanley, Ph.D., Chair

Committee in Charge:

Michael E. Adams, Ph.D.
(Neuroscience and Entomology)
John H. Ashe, Ph.D.
(Neuroscience and Psychology)
Curt Burgess, Ph.D.
(Psychology)
Christine Chiarello, Ph.D.
(Psychology)
Margarita C. Curras, Ph.D.
(Neuroscience)
Scott N. Currie, Ph.D.
(Neuroscience)
Glenn I. Hatton, Ph.D.
(Neuroscience)
Walter H. Metzner, Ph.D.
(Biology)
B. Glenn Stanley, Ph.D.
(Neuroscience and Psychology)
Raphael Zidovetzki, Ph.D.
(Neuroscience and Biology)
Carlos G. Velez-Ibanez, Ph.D.
Dean, College of Humanities, Arts, and Social Sciences, ex officio
Michael Clegg, Ph.D.
Interim Dean, College of Natural and Agricultural Sciences, ex officio

PROPOSED

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The Neuroscience major is an intercollege major offered by the College of Humanities, Arts, and Social Sciences and
the College of Natural and Agricultural Sciences. Both the Neuroscience and Psychology Departments offer upper-division courses which contribute toward an academic program with emphasis in the behavior, physiology, neurobiology, and neurochemistry of humans and other animals. Students can develop a stronger program in these areas if they major in Neuroscience rather than Biology or Psychology. Students take courses in both the Departments of Neuroscience and Psychology to complete requirements for the Neuroscience major.

The Neuroscience major replaces the former Psychobiology major. Undergraduates who matriculated at UCR before Fall, 1997, may choose to have either the Psychobiology or Neuroscience degree conferred upon graduation. The course requirements are those listed in the General Catalog at the time of matriculation. The Psychobiology major is no longer available after Spring, 1997.

Both a Bachelor of Arts and a Bachelor of Science degree are offered by each college. . . .

[no changes in the remainder of this section]

CAREER OPPORTUNITIES

[no changes]

DEGREE REQUIREMENTS

[no changes]

UNIVERSITY REQUIREMENTS

[no changes]

COLLEGE REQUIREMENTS

College breadth requirements vary depending on which college is chosen to award the degree. For a detailed list of breadth requirements and a summary of
units, see the Undergraduate Studies section of this catalog. Students are urged to consult their advisor regarding requirements.

The following restrictions and additions apply to college breadth requirements for the Neuroscience major.

**For the College of Humanities, Arts, and Social Sciences**

**Humanities**

No course in performance may be used. Foreign language at level 4 or above for the B.S. or level 5 or above for the B.A. may be used to fulfill up to 8 units of the Humanities breadth requirement.

**Social Sciences**

[no changes]

**Foreign Language**

[no changes]

**Natural Sciences and Mathematics**

Lower-division science and mathematics courses in the Neuroscience major satisfy the Natural Sciences and Mathematics breadth requirement.

**For the College of Natural and Agricultural Sciences**

**Humanities**

[no changes]

**Social Sciences**

[no changes]

**Foreign Language**

[no changes]

**Natural Sciences and Mathematics**

The Neuroscience Core in the Neuroscience major satisfies the Natural Sciences and Mathematics breadth requirement.

**For the College of Humanities, Arts, and Social Sciences**

**Humanities**

Foreign language at level 4 or above for the B.A. may be used to fulfill up to 8 units of the Humanities breadth requirement. Philosophy 135 and 139 are recommended.

**Social Sciences**

[no changes]

**Foreign Language**

[no changes]

**Natural Sciences and Mathematics**

[no changes]
Lower-division science and mathematics courses in the Neuroscience major satisfy the Natural Sciences and Mathematics breadth requirement.

MAJOR REQUIREMENTS

The major requirements for the Bachelor of Arts and the Bachelor of Science degrees in Neuroscience are as follows:

1. Lower-division requirements (61-65 units)
   a) Biology 5A, 5B, 5C (Biology 2 and 3 may be substituted for 5A and 5B with advisor's approval.)
   b) Psychology 11 or Statistics 40 or 100A or 105
   c) Mathematics 9A (or 9HA) and 9B (or 9HB)
   d) Chemistry 1A (or 1HA), 1B (or 1HB), 1C (or 1HC); Chemistry 112A-112B-112C

2. Upper-division requirements for the B.A. degree (36 units with no fewer than 16 units each in Biology and Psychology; where such courses are cross-listed, use of the cross-listing is acceptable)
   a) Neuroscience 106
   b) Neuroscience/Psychology 120, 124
   c) Biology 102, and two laboratory courses from Biology 100, 114, 118, 151, 161A, 161B, 163, 166, 167, 171, 173, 175L, 176L (if Neuroscience/Psychology 120L is taken to complete "d")
   d) Neuroscience/Psychology 120L or Biology 176L
   e) Additional elective courses from the following to meet the unit requirements: Biology 100, 105, 108, 110, 111, 114, 117, 118, 127, 151, 160, 161A, 161B, 162, 163, 166, 167, 176, 176L

Natural Sciences and Mathematics

The Neuroscience Core in the Neuroscience major satisfies the Natural Sciences and Mathematics breadth requirement.

MAJOR REQUIREMENTS

1. Neuroscience Core (65-70 units; satisfies the Life Sciences Core required for some majors in the College of Natural and Agricultural Sciences) Up to 12 units of upper division life sciences courses (for this major, courses from the departments of Biochemistry, Biology, Entomology, and Neuroscience) not being used to satisfy the core may be taken prior to completion of the core; permission from the program chair or the program chair's designate is required to take upper division units in excess of these 12 units.
   a) Biology 5A, 5B, 5C (Biology 2 and 3 may be substituted for 5A and 5B with advisor's approval.)
   b) Psychology 11 or Statistics 40 or 100A or 105
   c) Mathematics 9A (or 9HA) and 9B (or 9HB)
   d) Chemistry 1A (or 1HA), 1B (or 1HB), 1C (or 1HC); Chemistry 112A-112B-112C
   f) Biochemistry 100 or 110A

Upper-division requirements:

2. First Tier (13-14 units)
   a) Neuroscience 106
   b) Neuroscience/Psychology 120
   c) Neuroscience/Psychology 120L or Biology 176L
   d) Neuroscience/Psychology 124
3. Upper-division requirements for the B.S. degree (52 units with no fewer than 16 units each in Biology and Psychology; where such courses are cross-listed, use of the cross-listing is acceptable)
   a) Neuroscience 106
   b) Neuroscience/Psychology 120, 124
   c) Biology 102 and two laboratory courses from Biology 100, 114, 118, 151, 161A, 161B, 163, 166, 167, 171, 173, 175L, 176L (if Neuroscience/Psychology 120L is taken to complete "d")
   d) Neuroscience/Psychology 120L or Biology 176L
   e) Additional elective courses from the following to meet the unit requirements: Biology 100, 105, 108, 110, 111, 114, 117, 118, 127, 151, 160, 161A, 161B, 162, 163, 166, 167, 171, 173, 175, 175L, 176L, 185F, 185P; Psychology 130, 132, 134, 135, 146, 162, 166; Neuroscience/Psychology 125, 126; Biology 177 or Neuroscience/Psychology 127; Neuroscience 116, 121; one from Biochemistry 100, 110A, 110B

3. Second Tier (at least 12 units for the B.A. or at least 20 units for the B.S.)

   Biology 111, 176, 177; Biology 176L or Neuroscience/Psychology 120L (whichever was not used under 2, above);
   Neuroscience 116, 121;
   Neuroscience/Psychology 125, 126, 127;
   Psychology 129, 166

4. Third Tier (additional units to reach a total of 36 units for the B.A. or 52 units for the B.S.)

   Select from courses listed under 1, 2, or 3, above not used to satisfy those requirements, and the additional courses listed below. The combined number of units taken under 2, 3, and 4 must total either 36 if the B.A. is sought or 52 if the B.S. is sought.

   Biochemistry 102, 110B, 110C; Biology 100, 102, 105, 107, 108, 109, 110, 151, 160, 161A, 161B; Entomology/Biology 162; Biology 167, 171; Entomology/Biology 173; Biology 175, 175L, 185P; Computer Science 170; up to 9 units from Neuroscience 191, 194, 197, and/or 199; Physics 139L; Psychology 130, 132, 134; Human Development/Psychology 135; Anthropology/Psychology 146; Human Development/Psychology 162.

Note: No courses other than those listed may be used in the major unless specifically approved by the program chair or the program chair's designate.

Note: Students interested in physiology, neurobiology or neurochemistry should include one of the Biochemistry courses in their program.

Course substitutions may be made only with the approval of an advisor. Advisor's approval is required for Biology 190.
Sample Program for the Bachelor of Arts

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th>Fall Winter Spring</th>
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<tbody>
<tr>
<td>General Chemistry</td>
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<tr>
<td>Upper-division Biology or Psychology</td>
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<tr>
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<td>4 4</td>
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<tr>
<td>Humanities/Social Sciences</td>
<td>17 13 13</td>
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<th>Senior Year</th>
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<td>Upper-division Biology or Psychology</td>
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<tr>
<td>Electives</td>
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Sample Program for the Bachelor of Science

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<td>BIOL 005A, BIOL 005B</td>
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</tr>
<tr>
<td>PSYC 003</td>
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<tr>
<td>Total Units</td>
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Total Units 16 16 16

General Physics Lab 1 1 1
Humanities/Social Sciences 4 4 4
Total Units 17 17 17

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General Physics | 4 | 4 | 4 |
General Physics Lab | 1 | 1 | 1 |
Upper-division Biology or Psychology | 4 | 4 | 8 |
Humanities/Social Sciences | 8 | 8 | 4 |
Total Units | 17 | 17 | 17 |

Senior Year  | Fall | Winter | Spring |
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Upper-division Biology or Psychology | 8 | 8 | 8 |
Humanities/Social Sciences | 4 | 4 | 8 |
Electives | 4 | 8 | 8 |
Total Units | 16 | 16 | 16 |

TEACHING IN PUBLIC SCHOOLS

[no changes]

TEACHING IN PUBLIC SCHOOLS

[no changes]

Justification:

1. Committee in Charge of Dean Clegg is no longer interim.

2a. MAJOR descriptive text changed to provide a better overview of the neuroscience areas which are covered.

2b. The 1997 dates could not be implemented as the approval process was not completed in time to do so.

3. Humanities for both CHASS and CNAS. The restriction on use of performance courses is a holdover from the inception of this major as a Psychobiology major and is no longer considered appropriate. Unit stipulation regarding foreign language level for breadth corrected. The two philosophy courses, The Philosophy of Psychology and The Philosophy of Science, augment the major while fulfilling breadth requirements.

4. Natural Sciences and Mathematics for both CHASS and CNAS. No substantive change; the term Life Sciences Core to describe a body of basic math and science courses as lower division prerequisites for certain majors, including psychobiology (now neuroscience), was established a year or so ago in the College of Natural and Agricultural Sciences. To achieve simplicity and consistency, an almost identical body of primarily lower-division prerequisites in the major has had one requirement added and been renamed (see 6, below).

MAJOR REQUIREMENTS

5. Introductory paragraph is not really needed and just takes up space.

6. 1f. BCH 100 or 110A, basic biochemistry courses, are appropriate in a neuroscience major. They were recommended in the old Psychobiology major. Further, the addition of this requirement to the newly named Neuroscience Core firmly aligns the major's basic science and math prerequisites with the Life Sciences Core requirement established by CNAS and which majors declared under CNAS in this inter-college major are held for. Similar requirements in CHASS are also satisfied.

7. The changes proposed under First Tier, Second Tier, and Third Tier are essentially a reorganization of current requirements. (NOTE: In an effort to differentiate between courses actually deleted or added and those only regrouped, a liberty has been taken in the usual overstrike/underline format: boldfacing has been applied to courses which have actually been deleted or added; bolding would not actually be used in the General Catalog, of course.) For cross-listed courses, all cross-listing rubrics have been used. Ongoing course availability, heavy enrollment demand by other majors, or suitability for inclusion in the major were factors resulting in the deletions and additions. The tier groupings of requirements ensure good breadth, formally achieved with the requirement of a minimum of 16 units each from Biology and Psychology. More flexibility in choosing electives allows for developing depth of interest.
The simpler presentation, including elimination of separate (and mostly repetitive) sections for the B.A. and the B.S. degrees, should make it easier to comprehend what is required.

While unit requirements in individual sections have changed, the total number of units required (Neuroscience Core plus upper division) is about the same: currently 97 u. vs proposed 101 u. for the B.A. and 113 u. vs 117 u. for the B.S.

8. Sample Programs: Various changes made to reflect changes in major or to conform to official abbreviations.

Effective: Fall, 1998
Approved by the Neuroscience Committee: 1/20/98
Approved by the College of Humanities, Arts, and Social Sciences Executive Committee: 2/11/98
Approved by the College of Natural and Agricultural Sciences: 2/11/98
Approved by the Committee on Educational Policy: 3/13/98