Executive Committee
College of Natural and Agricultural Science

Report to Riverside Division
December 6, 2016

To be adopted:

Proposed changes to the undergraduate major requirements in Neuroscience.

PRESENT:
Change of Major Criteria

Students must be in good academic standing at the time the Change of Major Petition is filed. Students must successfully repeat any outstanding Life Science Core course prior to acceptance into the major.

2nd and 3rd Quarter Freshmen
The following math and science courses must be completed with a grade of C– or better: CHEM 001A, CHEM 01LA, CHEM 001B, CHEM 01LB, ~~MATH 008B~~ or MATH 009A

4th Quarter Freshman and Sophomore (up to 89 earned units)
The following math and science courses must be completed with a grade of C– or better: CHEM 001A, CHEM 01LA, CHEM 001B, CHEM 01LB, CHEM 001C, CHEM 01LC, BIOL 005A, BIOL 05LA, BIOL 005B ~~MATH 008B~~ or MATH 009A, MATH 009B

Junior (90 - 134 earned units)
The following math and science courses must be completed with a grade of C– or better. Grades of D– or higher are acceptable for courses marked with an asterisk (*): CHEM 001A, CHEM 01LA, CHEM 001B, CHEM 01LB, CHEM 001C, CHEM 01LC BIOL 005A, BIOL 05LA, BIOL 005B, BIOL 005C* ~~MATH 008B~~ or MATH 009A, MATH 009B and completion of at least one of the following sequences with no grade lower than a C–: ~~CHEM 112A, CHEM 112B, CHEM 112C~~* PHYS 002A, PHYS 02LA, PHYS 002B, PHYS 02LB, PHYS 002C*, PHYS 02LC*

Senior (135 + units)
The following math and science courses must be completed with grade of C– or better. Grades of

PROPOSED:
Change of Major Criteria

Students must be in good academic standing at the time the Change of Major Petition is filed. Students must successfully repeat any outstanding Life Science Core course prior to acceptance into the major.

2nd and 3rd Quarter Freshmen
The following math and science courses must be completed with a grade of C– or better: CHEM 001A, CHEM 01LA, CHEM 001B, CHEM 01LB, MATH 006B or MATH 009A

4th Quarter Freshman and Sophomore (up to 89 earned units)
The following math and science courses must be completed with a grade of C– or better: CHEM 001A, CHEM 01LA, CHEM 001B, CHEM 01LB, CHEM 001C, CHEM 01LC, BIOL 005A, BIOL 05LA, BIOL 005B, MATH 006B or MATH 009A, MATH 009B

Junior (90 - 134 earned units)
The following math and science courses must be completed with a grade of C– or better. Grades of D– or higher are acceptable for courses marked with an asterisk (*): CHEM 001A, CHEM 01LA, CHEM 001B, CHEM 01LB, CHEM 001C, CHEM 01LC BIOL 005A, BIOL 05LA, BIOL 005B, BIOL 005C*, MATH 006B or MATH 009A, MATH 009B and completion of at least one of the following sequences with no grade lower than a C–: CHEM 12A, CHEM 12B, CHEM 12C*, PHYS 002A, PHYS 02LA, PHYS 002B, PHYS 02LB, PHYS 002C*, PHYS 02LC*

Senior (135 + units)
The following math and science courses must be completed with grade of C– or better. Grades of

D– or higher are acceptable for courses marked with an asterisk (*): CHEM 001A, CHEM 01LA, CHEM 001B, CHEM 01LB, CHEM 001C, CHEM 01LC, BIOL 005A, BIOL 05LA, BIOL 005B, BIOL 005C*, ~~MATH 008B~~ or MATH 009A, MATH 009B~~, CHEM 112A~~, ~~CHEM 112B, CHEM 112C~~*, PHYS 002A, PHYS 02LA, PHYS 002B, PHYS 02LB, PHYS 002C*, PHYS 02LC* PSYC 011* or STAT 040* or STAT 100A* BCH 100* or BCH 110A* CBNS 106

GPA in upper division courses applied to the Neuroscience Major (Tier 1, 2, and 3) must be 2.00 or higher.

Transfer Students

Transfer applicants must have a minimum GPA of 2.70 (currently 2.70, but can be adjusted upward for selectivity by the college of Majors). Transfer applicants must further meet two of the curricular preparation requirements below.

1. Math 9A and 9B or equivalent.

2. Two semesters of a single lab-based science discipline (e.g. Chemistry or Biology or Physics).

3. The equivalent of Math 9C plus one semester of Vector Calculus or Linear Algebra.

Individual Majors can (and do) set their particular curricular requirements to be more rigorous.

University Requirements

See Undergraduate Studies section.

College Requirements

College breadth requirements vary depending on which college is chosen to award the degree. For details on breadth requirements, see the Colleges and Programs 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.

D– or higher are acceptable for courses marked with an asterisk (*): CHEM 001A, CHEM 01LA, CHEM 001B, CHEM 01LB, CHEM 001C, CHEM 01LC, BIOL 005A, BIOL 05LA, BIOL 005B, BIOL 005C*, MATH 006B or MATH 009A, MATH 009B, CHEM 12A, CHEM 12B, CHEM 12C*, PHYS 002A, PHYS 02LA, PHYS 002B, PHYS 02LB, PHYS 002C*, PHYS 02LC* PSYC 011* or STAT 040* or STAT 100A*, BCH 100* or BCH 110A*, CBNS 106

GPA in upper division courses applied to the Neuroscience Major (Tier 1, 2, and 3) must be 2.00 or higher.

Transfer Students

(No changes.)

University Requirements

(No changes.)

College Requirements

(No Changes.)

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.

Social Sciences
Psychology courses may not be used as part of the Social Sciences breadth requirement if a Biology course is used to meet any part of the Natural Sciences and Mathematics breadth requirement.

Foreign Language
In fulfilling the Foreign Language breadth requirement for both the B.A. and B.S. degrees, a modern language such as Spanish, Russian, Chinese, German, or French must be used.

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

For the College of Natural and Agricultural Sciences

Humanities
For the B.S. degree, 16 units instead of 12 units are required to fulfill the Humanities breadth requirement. PHIL 134 and PHIL 137 are recommended.

Social Sciences
For the B.S. degree, 16 units instead of 12 units are required to fulfill the Social Sciences breadth requirement. Psychology courses not required or approved for the Neuroscience major may be used in meeting the Social Sciences breadth requirement.

Foreign Language
In fulfilling the Foreign Language breadth requirement for the B.A. degree, a modern language such as Spanish, Russian, Chinese, German, or French must be used. Further, fourth-

For the College of Humanities, Arts, and Social Sciences

(No changes.)

quarter level proficiency in one foreign language (not level 2 in two languages) is required.

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

Major Requirements

1. Neuroscience Core (66-72 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, Cell Biology and Neuroscience, and Entomology) 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.

Students must complete all required Life Science Core courses with a grade of "C-" or better and with a cumulative GPA in the courses of at least 2.0. Grades of "D" or "F" in two required courses, either separate courses or repetitions of the same course, are grounds for discontinuation from the major.

a) BIOL 005A, BIOL 05LA, BIOL 005B, BIOL 005C (BIOL 002 and BIOL 003 may be substituted for BIOL 005A, BIOL 05LA, and BIOL 005B with advisor's approval.)

b) PSYC 011 or STAT 040 or STAT 100A

c) ~~MATH 008B~~ or MATH 009A or MATH 09HA; and MATH 009B or MATH 09HB

d) CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC (or CHEM 01HA and CHEM 1HLA, CHEM 01HB and CHEM 1HLB, CHEM 01HC and CHEM 1HLC); ~~CHEM 112A, CHEM 112B, CHEM 112C~~

Major Requirements

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a) BIOL 005A, BIOL 05LA, BIOL 005B, BIOL 005C (BIOL 002 and BIOL 003 may be substituted for BIOL 005A, BIOL 05LA, and BIOL 005B with advisor's approval.)

b) PSYC 011 or STAT 040 or STAT 100A

c) <u>MATH 006B</u> or MATH 009A or MATH 09HA; and MATH 009B or MATH 09HB

d) CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC (or CHEM 01HA and CHEM 1HLA, CHEM 01HB and CHEM 1HLB, CHEM 01HC and CHEM 1HLC); <u>CHEM 12A, CHEM 12B, CHEM 12C</u>

e) PHYS 002A, PHYS 002B, PHYS 002C, PHYS 02LA, PHYS 02LB, PHYS 02LC; or PHYS 040A, PHYS 040B, PHYS 040C

f) BCH 100 or BCH 110A

2. Upper-division requirements

Students must complete all required First Tier and Second Tier courses with a grade of "C-" or better and with a cumulative GPA in the courses of at least 2.0. Grades of "D" or "F" in two required courses, either separate courses or repetitions of the same course, are grounds for discontinuation from the major.

a) First Tier (14 units)

(1) CBNS 106 with a grade of C- or better
(2) CBNS 120/PSYC 120
(3) CBNS 120L/PSYC 120L or CBNS 130L
(4) CBNS 124/PSYC 124

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

BIOL 178; CBNS 101, CBNS 116, CBNS 121/PSYC 121, CBNS 125/PSYC 125, CBNS 126/PSYC 126, CBNS 127/PSYC 127; CBNS 129, PSYC 112, PSYC 117, PSYC 129

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

Select from upper-division courses listed under Neuroscience Core, Second Tier above not used to satisfy those requirements, and the additional courses listed below. The combined number of units taken under First Tier, Second Tier, and Third Tier must total either 36 if the B.A. is sought or 52 if the B.S. is sought.

BCH 102, BCH 110B, BCH 110C, BCH 120; BIOL 100/ENTM 100, BIOL 102, BIOL 105, BIOL 107A, BIOL 108, BIOL 109, BIOL 110, BIOL 151, BIOL 160, BIOL 161A, BIOL 161B; BIOL 162/ENTM 162; BIOL 171, BIOL 171L, BIOL 173/ENTM 173, BIOL 175, BIOL 185P; CBNS 108, CBNS 150/ENTX 150, CBNS 165,

e) PHYS 002A, PHYS 002B, PHYS 002C, PHYS 02LA, PHYS 02LB, PHYS 02LC; or PHYS 040A, PHYS 040B, PHYS 040C

f) BCH 100 or BCH 110A

2. Upper-division requirements

(No changes).

CBNS 169; up to 9 units from CBNS 194, CBNS 197 and/or CBNS 199; CS 170; PHYS 139L; PSYC 115, PSYC 130, PSYC 132, PSYC 134, PSYC 135, ANTH 146/PSYC 146, ENTM 173, BIOL 175, BIOL 185P; CBNS 108, CBNS 150/ENTX 150, CBNS 165, CBNS 169; up to 9 units from CBNS 194, CBNS 197 and/or CBNS 199; CS 170; PHYS 139L; PSYC 115, PSYC 130, PSYC 132, PSYC 134, PSYC 135, ANTH 146/ PSYC 146

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.

Sample Program

Bachelor of Arts

Freshman Year	Fall	Winter	Spring
CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC	4,1	4,1	4,1
BIOL 005A, BIOL 005LA, BIO 005B		3,1	4
ENGL 001A, ENGL 001B, ENGL 001C	4	4	4
~~MATH 008B or~~ MATH 009A, MATH 009B	4	4	
Humanities/ Social Sciences			4
Total Units	13	17	17

Sophomore Year	Fall	Winter	Spring
~~CHEM 112A, CHEM 112B, CHEM 112C~~	4	4	4
BIOL 005C	4		
CBNS 106	4		

Sample Program

Bachelor of Arts

Freshman Year	Fall	Winter	Spring
CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC	4,1	4,1	4,1
BIOL 005A, BIOL 005LA, BIOL 005B		3,1	4
ENGL 001A, ENGL 001B, ENGL 001C	4	4	4
MATH 009A, MATH 009B	4	4	
Humanities/ Social Sciences			4
Total Units	13	17	17

Sophomore Year	Fall	Winter	Spring
CHEM 12A, CHEM 12B, CHEM 12C	4	4	4
BIOL 005C	4		
CBNS 106	4		

PSYC 001, PSYC 002		4	4
General Physics	4	4	4
General Physics Lab	1	1	1
Foreign Language	1,2	4	4
Total Units	17	17	17

PSYC 001, PSYC 002		4	4
General Physics	4	4	4
General Physics Lab	1	1	1
Foreign Language	1,2	4	4
Total Units	17	17	17

Junior Year	**Fall**	**Winter**	**Spring**
BCH 100 or BCH 110A	4		
PSYC 011	5		
Upper-division BIOL, CBNS, or PSYC	4	8	8
Foreign Language	3,4	4	4
Humanities/Social Sciences		4	4
Total Units	17	16	12

Junior Year	**Fall**	**Winter**	**Spring**
BCH 100 or BCH 110A	4		
PSYC 011	5		
Upper-division BIOL, CBNS, or PSYC	4	8	8
Foreign Language	3,4	4	4
Humanities/Social Sciences		4	4
Total Units	17	16	12

Senior Year	**Fall**	**Winter**	**Spring**
Upper-division BIOL, CBNS, or PSYC	4	4	4
Humanities/Social Sciences	8	4	4
Electives	4	8	8
Total Units	16	16	16

Senior Year	**Fall**	**Winter**	**Spring**
Upper-division BIOL, CBNS, or PSYC	4	4	4
Humanities/Social Sciences	8	4	4
Electives	4	8	8
Total Units	16	16	16

Bachelor of Science

Freshman Year	**Fall**	**Winter**	**Spring**
CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC	4,1	4,1	4,1

Bachelor of Science

Freshman Year	**Fall**	**Winter**	**Spring**
CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC	4,1	4,1	4,1

~~MATH 008B or~~ MATH 009A, MATH 009B	4	4		MATH 009A, MATH 009B	4	4	
BIOL 005A, BIOL 005LA, BIO 005B		3,1	4	BIOL 005A, BIOL 005LA, BIOL 005B		3,1	4
ENGL 001A, ENGL 001B, ENGL 001C	4	4	4	ENGL 001A, ENGL 001B, ENGL 001C	4	4	4
Humanities/ Social Sciences			4	Humanities/ Social Sciences			4
Total Units	13	17	17	Total Units	13	17	17

Sophomore Year	**Fall**	**Winter**	**Spring**	**Sophomore Year**	**Fall**	**Winter**	**Spring**
~~CHEM 112A, CHEM 112B, CHEM 112C~~	4	4	4	CHEM 12A, CHEM 12B, CHEM 12C	4	4	4
BIOL 005C	4			BIOL 005C	4		
CBNS 106	4			CBNS 106	4		
PSYC 001, PSYC 002		4	4	PSYC 001, PSYC 002		4	4
General Physics	4	4	4	General Physics	4	4	4
General Physics Lab	1	1	1	General Physics Lab	1	1	1
Humanities/Social Sciences		4	4	Humanities/Social Sciences		4	4
Total Units	17	17	17	Total Units	17	17	17

Junior Year	**Fall**	**Winter**	**Spring**	**Junior Year**	**Fall**	**Winter**	**Spring**
BCH 100 or BCH 110A	4			BCH 100 or BCH 110A	4		
PSYC 011	5			PSYC 011	5		
Upper-division BIOL, CBNS, or PSYC	4	8	8	Upper-division BIOL, CBNS, or PSYC	4	8	8
Humanities/ Social Sciences	4	8	4	Humanities/ Social Sciences	4	8	4
Total Units	17	16	12	Total Units	17	16	12

Senior Year	**Fall**	**Winter**	**Spring**	**Senior Year**	**Fall**	**Winter**	**Spring**
Upper-division BIOL, CBNS, or PSYC	12	8	8	Upper-division BIOL, CBNS, or PSYC	12	8	8

Electives	4	8	8	Electives	4	8	8
Total Units	16	16	16	Total Units	16	16	16

Justification:
The Mathematics Department has proposed, and the CNAS Executive Committee has approved, a proposal for the creation of a new pre-calculus sequence consisting of MATH 006A and MATH 006B. This is an effort in improve the success rate of students who test into MATH 008A and go on to Calculus. MATH 008A and 008B is a sequence intended to serve the under-prepared student to get into Freshman Calculus MATH 009B quickly.

The Department of Chemistry has renumbered our regular organic chemistry courses from a Upper Division to a Lower Division series.

Current Numbering System: Organic Chemistry CHEM 112A, CHEM 112B, CHEM 112C.

NEW Numbering System: Organic Chemistry CHEM 12A, CHEM 12B, CHEM 12C.

Approvals:

Approved by the faculty of the Department of Neuroscience:	May 18, 2016
Approved by the Executive Committee College of Natural and Agricultural Sciences:	May 19, 2016
Approved by the Committee on Educational Policy:	June 10, 2016
Approved by Executive Council in lieu of the Division:	June 20, 2016