



Arts and Sciences

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October 3, 2011

W. Randy Smith  
Vice Provost  
Office of Academic Affairs  
203 Bricker Hall, 190 N. Oval Mall  
CAMPUS

Dear Randy:

We are pleased to advance the semester conversion proposal for the Neuroscience Minor. The conversion was approved with contingency via e-vote by ASC CCI on 9-15-11. The unit has made the necessary changes. However, one small issue has since then appeared in the revision: on the semester advising sheet, the header "**Elective Requirement (Take 3 Courses, 15 Credits)**" should say "take 3 courses, 9 credits." This is a small oversight, and Larry Krissek, chair of CCI, requested that the minor be advanced with a note to CAA.

Please let me know if I can be of further assistance as CAA considers this proposal.

Sincerely,

Bernadette Vankeerbergen, Ph.D.  
Program Manager, Curriculum and Assessment  
College of Arts and Sciences

Status: PENDING

**PROGRAM REQUEST**  
Interdisciplinary Minor in Neuroscience

Last Updated: Williams, Valarie Lucille  
09/28/2011

|  |  |
|--|--|
| <b>Fiscal Unit/Academic Org</b>                | Arts & Sciences Administration - D4305   |
| <b>Administering College/Academic Group</b>    | Arts And Sciences  |
| <b>Co-administering College/Academic Group</b> | The College of Medicine  |
|  | Arts And Sciences  |
| <b>Semester Conversion Designation</b>         | Converted with minimal changes to program goals and/or curricular requirements (e.g., sub-plan/specialization name changes, changes in electives and/or prerequisites, minimal changes in overall structure of program, minimal or no changes in program goals or content) |
| <b>Current Program/Plan Name</b>               | Interdisciplinary Minor in Neuroscience  |
| <b>Proposed Program/Plan Name</b>              | Interdisciplinary Minor in Neuroscience  |
| <b>Program/Plan Code Abbreviation</b>          | NEURSC-MN  |
| <b>Current Degree Title</b>                    |  |

**Credit Hour Explanation**

| Program credit hour requirements                              |         | A) Number of credit hours in current program (Quarter credit hours) | B) Calculated result for 2/3rds of current (Semester credit hours) | C) Number of credit hours required for proposed program (Semester credit hours) | D) Change in credit hours |
|---|---------|---|--|---|---------------------------|
| Total minimum credit hours required for completion of program |         | 25  | 16.7   | 15  | 1.7                       |
| Required credit hours offered by the unit                     | Minimum |   |  |   |                           |
|   | Maximum |   |  |   |                           |
| Required credit hours offered outside of the unit             | Minimum | 25  | 16.7   | 15  | 1.7                       |
|   | Maximum | 25  | 16.7   | 15  | 1.7                       |
| Required prerequisite credit hours not included above         | Minimum | 5   | 3.3  | 3   | 0.3                       |
|   | Maximum | 20  | 13.3   | 14  | 0.7                       |

**Program Learning Goals**

Note: these are required for all undergraduate degree programs and majors now, and will be required for all graduate and professional degree programs in 2012. Nonetheless, all programs are encouraged to complete these now.

**Program Learning Goals**      • No changes have been made to original approval version

**Assessment**

Assessment plan includes student learning goals, how those goals are evaluated, and how the information collected is used to improve student learning. An assessment plan is required for undergraduate majors and degrees. Graduate and professional degree programs are encouraged to complete this now, but will not be required to do so until 2012.

**Is this a degree program (undergraduate, graduate, or professional) or major proposal?** No

**Program Specializations/Sub-Plans**

If you do not specify a program specialization/sub-plan it will be assumed you are submitting this program for all program specializations/sub-plans.

**Pre-Major**

**Does this Program have a Pre-Major?** No

**Attachments**

- Cover Letter Minor.pdf: Cover Letter  
*(Letter from Program-offering Unit. Owner: Campbell, Carroll C)*
- Minor Program Rationale.pdf: Rationale  
*(Program Rationale Statement. Owner: Campbell, Carroll C)*
- Neuroscience Minor Quarter Version.pdf: Advising Sheet Qrt  
*(Quarter Advising Sheet(s). Owner: Campbell, Carroll C)*
- Transition Policy.pdf: Transition Policy  
*(Transition Policy. Owner: Campbell, Carroll C)*
- Neurosci Minor Response to CCI.pdf: Response to CCI Requests  
*(Other Supporting Documentation. Owner: Haddad, Deborah Moore)*
- Semester Advising Sheet Neurosci Minor.pdf: Revised Advising Sheet  
*(Semester Advising Sheet(s). Owner: Haddad, Deborah Moore)*
- Neuroscience Program Courses.pdf: List of Courses  
*(List of Semester Courses. Owner: Haddad, Deborah Moore)*

**Comments**

**Workflow Information**

| Status             | User(s)   | Date/Time           | Step                   |
|--------------------|---|---------------------|------------------------|
| Submitted          | Campbell, Carroll C   | 08/31/2011 12:51 PM | Submitted for Approval |
| Approved           | Vankeerbergen, Bernadette Chantal   | 08/31/2011 01:38 PM | Unit Approval          |
| Approved           | Williams, Valarie Lucille   | 08/31/2011 01:48 PM | College Approval       |
| Revision Requested | Haddad, Deborah Moore   | 09/06/2011 02:19 PM | Ad-Hoc Approval        |
| Submitted          | Campbell, Carroll C   | 09/09/2011 08:51 AM | Submitted for Approval |
| Approved           | Haddad, Deborah Moore   | 09/09/2011 10:35 AM | Ad-Hoc Approval        |
| Approved           | Vankeerbergen, Bernadette Chantal   | 09/09/2011 10:50 AM | Unit Approval          |
| Approved           | Williams, Valarie Lucille   | 09/09/2011 01:32 PM | College Approval       |
| Revision Requested | Vankeerbergen, Bernadette Chantal   | 09/15/2011 07:32 PM | ASCCAO Approval        |
| Submitted          | Campbell, Carroll C   | 09/27/2011 11:25 AM | Submitted for Approval |
| Approved           | Vankeerbergen, Bernadette Chantal   | 09/27/2011 11:25 AM | Unit Approval          |
| Approved           | Williams, Valarie Lucille   | 09/28/2011 04:50 PM | College Approval       |
| Pending Approval   | Nolen, Dawn<br>Jenkins, Mary Ellen Bigler<br>Meyers, Catherine Anne<br>Vankeerbergen, Bernadette Chantal<br>Hanlin, Deborah Kay | 09/28/2011 04:50 PM | ASCCAO Approval        |



Department of Psychology

225 Psychology Building  
1835 Neil Avenue  
Columbus, OH 43210

[www.psy.ohio-state.edu](http://www.psy.ohio-state.edu)

August 30, 2011

To: Office of Academic Affairs

Re: Cover letter for semester conversion of the Neuroscience Minor

Please find all materials for the Neuroscience Interdisciplinary Program's Minor conversion from quarters to semesters attached.

With respect to converting the Minor, the Neuroscience Program has taken this opportunity to make the Minor more congruent with the recently CAA approved Neuroscience Major. Utilizing the originally approved Neuroscience Minor's organization, semester programs from benchmark institutions, and guidance from our interdisciplinary partners, the Minor's curriculum has been expounded upon. While the Minor's course ratio between quarter and semester hours is symmetric and the overall structure of the Minor has been maintained, students will be able to select from 70% more courses. This enhancement of the curriculum will provide students with greater opportunity to explore and obtain a foundation in this vast, rapidly evolving interdisciplinary field.

As director of the Neuroscience Major Program, I can attest to the rigor with which the conversion process was undertaken and I approve all of the proposed changes to our Minor Program.

Listed below are all majors and minors offered by the Neuroscience Program

1. Undergraduate bachelor degree programs and /or majors:
  - a. The program offers a Bachelor of Science degree with a specialization in one of three tracks: Molecular/Cellular, Systems/Behavioral, and Cognitive/Computational.
  - b. SIS code: NEURSC-BS
  - c. This major has already received CAA approval for semesters.
  
2. Undergraduate minor:
  - a. The program offers one interdisciplinary neuroscience minor
  - b. SIS code: NEURSC-MN
  - c. This minor is seeking approval for quarter to semester conversion.

All of these programs are proposed to continue under semesters. No major or minor is being withdrawn. All necessary materials for the semester conversion are attached.

Sincerely,

A handwritten signature in black ink that reads "John P. Bruno".

John P. Bruno  
Director - Neuroscience Major  
Professor of Psychology, Neuroscience, and Psychiatry

### **Program Rationale Statement—Neuroscience Minor**

The proposal to establish an Interdisciplinary Minor in Neuroscience was approved by the Council on Academic Affairs on March 2, 2005 and final approvals were obtained in April of 2005. In the seven years that the Minor has been established, no thorough updates or adjustment to its curriculum and has been conducted. While the basic structure of the Minor has not been changed, the addition of 70% more classes as well as making the Minor more congruent with the approved semester Neuroscience Major will allow the program to better serve the educational and career goals of our student population. We have applied the 2/3 rule and maintained the basic structure of the Minor; however additional course options and clearer clarification for the use of experiential and other related coursework toward the minor has been added.

Under the quarter version of the Neuroscience Minor, students take two foundational courses (9 quarter credit hours) and 16 quarter credit hours of advanced elective courses. Congruent with the quarter version, students following the semester version will take the same two foundational courses (6 semester credit hours) and 9 semester credit hours of elective coursework (now providing a total of 20 advanced course options). Heeding feedback from students and university advising staff, the role that experiential coursework (e.g., research and independent studies) and foundationally related courses (e.g., Biochemistry and molecular genetics) has been clarified in comparison to previous versions. The expansion of courses available to our students coupled with better defined instructions as to the Minor's requirements will allow us to better serve our students educational/career endeavors, and exemplify the interdisciplinary nature of the neuroscience field.

**LIST OF SEMESTER COURSES IN THE PROGRAM**

| SEMESTER COURSE  | QUARTER VERSION   | DESCRIPTION  | PREREQUISITES   | COURSE USAGE: |       |
|--|---|--|---|---------------|-------|
|  |   |  |   | MAJOR         | MINOR |
| <b>Neurosci 3000:</b><br><i>Introduction to Molecular/Cellular Neuroscience</i> (3 hrs)                    | Neurosci 300  | Introductory course covering organization & function of the nervous system at a level understandable to science & non-science majors.  | Biology 1113 (4 hrs).   | Major         | Minor |
| <b>Neurosci 3050:</b><br><i>Introduction to the Structure &amp; Function of the Nervous System</i> (3 hrs) | Neurosci 305  | The course will discuss basic principles of the anatomical & neurophysiological organization of the nervous system.  | Biology 1114 <b>OR</b> Neurosci 3000 <b>OR</b> permission of instructor.  | Major         | Minor |
| <b>Psych 2313:</b><br><i>Introduction to Behavioral Neuroscience</i> (3 hrs)                               | Psych 313   | Introduction to the structure & function of the nervous system in relation to behavior.  | Psych 1100 (3 hrs).   | Major         | Minor |
| <b>Psych 2513:</b><br><i>Introduction to Cognitive Neuroscience</i> (3 hrs)                                | Psych 513   | Examination of the neuroscientific approach to the study of cognition; primary focus on the psychobiology of memory, attention, language, & spatial orientation.   | Psych 1100 (3 hrs).   | Major         | Minor |
| <b>Data Analysis:</b><br><i>Choose 1 from the list in the Description section to the right.</i>            | Stat 218<br><br>Stat 245<br><br>Psych 220<br><br>MolGen 650 | 1. Stats 2180: <i>Intro to Statistics for the Life Sciences</i> (3 hrs)<br><b>OR</b><br>2. Stats 2450: <i>Intro to Statistical Analysis</i> (3 hrs)<br><b>OR</b><br>3. Psych 2220: <i>Intro to Data Analysis in Psychology</i> (3 hrs)<br><b>OR</b><br>4. MolGen 5650: <i>Analysis &amp; Interpretation of Biological Data</i> (3 hrs) | 1. Math 1151.01 (5 hrs).<br><br>2. Math 1151.01 (5 hrs).<br><br>3. Psych 1100 (3 hrs) + (Stats 145 <b>OR</b> Math 1130 <b>OR</b> Math 1148).<br><br>4. (Math 1150) <b>OR</b> (Math 1148+1149) + (9 hours at 300-level or higher in a dept of FAES <b>OR</b> Bio Sci). | Major         |       |
| <b>Psych 2305:</b><br><i>Drugs &amp; Behavior</i> (3 hrs)  | Psych 305   | Introduction to the psychology of licit & illicit psychoactive drug use.   | Psych 1100.   | Major         | Minor |
| <b>Neurosci 3010:</b><br><i>Neurophysiology</i> (3 hrs)  | New Course for Semesters                                    | The course will discuss basic principles of neurophysiology working from the level of the ion channel to the whole system.   | NeuroSci 3000 or NeuroSci 3050 or permission of instructor.   | Major         | Minor |

|  |                          |   |   |       |       |
|--|--------------------------|---|---|-------|-------|
| <b>Psych 4501:</b><br><i>Advanced Behavioral Neuroscience</i> (3 hrs)              | Psych 501                | Advanced discussion of contemporary issues in psychobiology, including: synaptic pharmacology, drugs, & behavior, neurodegenerative diseases & the biological bases of psychopathology.   | Psych 2313.   | Major | Minor |
| <b>Psych 4644:</b><br><i>Hormones &amp; Behavior</i> (3 hrs)                       | Psych 644                | Exploration of the interactions among hormones, brain & behavior through an integrative approach.   | Psych 2313.   | Major | Minor |
| <b>Neurosci 7050:</b><br><i>Neurobiology of Disease</i> (3 hrs)                    | Neurosci 705             | This course will explore the basis of major diseases affecting the nervous system.  | NeuroSci 3000 or permission of instructor.                          | Major |       |
| <b>Molecular Virology &amp; Immunology 7500:</b><br><i>Neuroimmunology</i> (3 hrs) | MVIMG 750                | This course will explore research & clinical applications of inflammatory processes within the central nervous system with special emphasis on neurodegenerative disorders, autoimmune disease & neurotrauma (e.g., spinal injury).                         | Permission of instructor.   | Major |       |
| <b>Neurosci 7001:</b><br><i>Foundations of Neuroscience</i> (3 hrs)                | New Course for Semesters | This course will discuss basic principles of the cellular, molecular, and neurophysiological organization of the nervous system.  | Permission of instructor.   | Major |       |
| <b>Neurosci 7009:</b><br><i>Neurodevelopment</i> (3 hrs)                           | Neurosci 790             | Interdisciplinary approach to the development of neural cells and the formation and maturation of vertebrate and invertebrate nervous systems.  | Permission of instructor.   | Major |       |
| <b>Biochem 4511*:</b><br><i>Intro to Biological Chemistry</i> (4 hrs)              | Biochem 511              | An introductory course in biochemistry dealing with the molecular basis of structure and metabolism of plants, animals, and microorganisms. <b>Strongly recommended for pre-med students.</b>   | (Chem 1220 or 1250) + (Chem 2310 or 2520) + 2 semesters of Bio Sci. | Major | Minor |
| <b>MolGen 4500**:</b><br><i>General Genetics</i> (4 hrs)                           | MolGen 500               | The principles of genetics, including molecular genetics, transmission genetics of prokaryotes and eukaryotes, developmental and non-chromosomal genetics, and the genetics and evolution of populations. <b>Strongly recommended for pre-med students.</b> | Biology 1113 + 3 add'l hours in Bio Sci.                            | Major | Minor |

|  |            |   |   |       |       |
|--|------------|---|---|-------|-------|
| <b>EEOB 4550:</b><br><i>Neurobiology of Behavior</i><br>(3 hrs)  | EEOB 632   | Integration of studies of sensory, integrative and motor systems with evolution and ecology.  | Two courses in the Biological Sciences. | Major | Minor |
| <b>Psych 4623:</b><br><i>Biological Clocks &amp; Behavior</i> (3 hrs)                                  | Psych 623  | Biological rhythms of animals & humans, including ultradian, daily, lunar, tidal & annual cycles; role of nervous & endocrine systems in relation to behavioral rhythms.  | Psych 2313 or permission of instructor. | Major | Minor |
| <b>Psych 5613H:</b><br><i>Biological Psychiatry</i><br>(3 hrs)   | Psych 613H | Provides a contemporary overview of the biological bases of several significant psychopathologies, including: mood disorders, schizophrenia, & PTSD/dissociative identity disorders.  | Psych 4501 or permission of instructor. | Major | Minor |
| <b>Psych 5898:</b><br><i>Seminar in Behavioral Neuroscience</i> (3 hrs)                                | Psych 726  | Team-taught seminar on selected topics from contemporary research areas in the field of behavioral neuroscience   | Psych 4501 or permission of instructor. | Major | Minor |
| <b>Psych 2310:</b><br><i>Sensation &amp; Perception</i> (3 hrs)  | Psych 310  | Examination of how observers perceive their environment through sensory information; emphasis on major sensory systems including vision, audition, spatial orientation, touch, taste & olfaction.                             | Psych 1100.                             | Major | Minor |
| <b>Psych 5600:</b><br><i>Psychobiology of Learning &amp; Memory</i> (3 hrs)                            | Psych 600  | Course will integrate coverage of animal learning & human memory, focusing on three key components of the field: behavioral processes, brain systems, & clinical perspectives.  | Psych 1100.                             | Major | Minor |
| <b>Psych 5606:</b><br><i>High-Level Vision</i><br>(3 hrs)  | Psych 606  | Examines the perceptual processes by which humans & other animals are able to obtain knowledge about the three-dimensional environment.   | Psych 2310.                             | Major | Minor |
| <b>Psych 5608:</b><br><i>Introduction Mathematical Psychology</i> (3 hrs)                              | Psych 608  | Survey of mathematical & computational modeling in psychology. Topics include psychophysical scaling, information processing, probabilistic choice, signal detection theory, model comparison, & Bayesian graphical modeling. | Psych 3321.                             | Major |       |
| <b>Psych 5609:</b><br><i>Introduction to Mathematical Models in Experimental Psychology</i><br>(3 hrs) | Psych 609  | An introduction to cognition with a focus on the application of mathematical models. Topic areas include memory, decision making, categorization, word recognition, priming, & reaction time.                                 | Psych 5608.                             | Major |       |



|   |                                 |  |   |       |       |
|---|---------------------------------|--|---|-------|-------|
| <b>Psych 5612; CSE 5612; Ling 5612; or Philos 5612:</b><br><i>Introduction to Cognitive Science</i> (3 hrs) | Psych, CSE, Ling, or Philos 612 | Cognitive science is an interdisciplinary study of the nature of human thought; psychological, philosophical, linguistic, & artificial intelligence approaches to knowledge representation.                          | 12 credit hrs from 2 of the following areas: CIS, Linguistics, Philosophy, or Psychology. | Major |       |
| <b>Psych 5614:</b><br><i>Cognitive Neuroscience</i> (3 hrs)   | Psych 913                       | Neuronal mechanisms of information processing  | Psych 2313 or 2513 or permission of instructor.   | Major | Minor |
| <b>Psych 5618:</b><br><i>Models of Memory</i> (3 hrs)   | Psych 618                       | Basic principles of neural network modeling & their applications in perception, memory, & language.  | Permission of instructor.   | Major |       |
| <b>CSE 5526:</b><br><i>Introduction to Neural Networks</i> (3 hrs)  | CSE 779                         | Survey of fundamental methods & techniques of neural networks. Single- and multi-layer perceptrons; radial-basis function networks; support vector machines; recurrent networks; supervised & unsupervised learning. | CSE 3521.   | Major | Minor |
| <b>CSE 5539:</b><br><i>Intermediate Studies in AI</i> (2 hrs)   | CSE 788                         | Neural network theories & computational models of brain functions. Topics include auditory & visual perception, learning, memory organization, & sensorimotor coordination.  | None  | Major |       |
| <b>SHS 5760:</b><br><i>Neurology of Speech, Language, &amp; Hearing Sciences</i> (3 hrs)                    | SHS 765                         | Structure & function of the central & peripheral nervous systems as they relate to speech & hearing.   | Grad standing in SHS or permission of instructor.   | Major |       |
| <b>Psych 2312:</b><br>Learning, Memory & Cognition (3 hrs)  | Psych 312                       | An introduction to experimental study of human memory, learning, and cognition.  | Psych 100 and Psych 220   |       | Minor |
| <b>Pharmacol 4600:</b><br>General Pharmacology  | Pharmacol 600                   | Introduction to the general principles of pharmacology, drug classification, and the sites and mechanisms of drug action.  | Some background in biochemistry and/or physiology or permission of instructor.            |       | Minor |
| <b>Philos 5800H:</b><br>Ethical Concepts in Health Care, Research, Policy, and Practice                     | Philos 580H                     | An interdisciplinary approach to an analysis of central moral dilemmas in health care research, policy, and practice.  | Jr or sr standing.  |       | Minor |

|   |                 |   |                           |              |              |
|---|-----------------|---|---------------------------|--------------|--------------|
| <p><b>Chem 2211:</b><br/>Quantitate Chemical Analysis for Biological and Medicinal Sciences</p> | <p>Chem 211</p> | <p>Quantitative chemical analysis with particular focus on bioanalytical and pharmaceutical applications.</p> | <p>Chem 123 or equiv.</p> |              | <p>Minor</p> |
| <p><b>Multiple Departments 4998:</b><br/>Undergraduate Research (3 hrs)</p>                     | <p>699</p>      | <p>Undergraduate Research</p>   | <p>Variable</p>           | <p>Major</p> | <p>Minor</p> |
| <p><b>Multiple Departments 3193:</b><br/>Individual Studies (3 hrs)</p>                         | <p>693</p>      | <p>Individual Studies</p>   | <p>Variable</p>           | <p>Major</p> | <p>Minor</p> |

The Ohio State University  
College of Arts and Sciences

Interdisciplinary Neuroscience Minor (NEURSC-MN)

Neuroscience Undergraduate Program  
43 Psychology Building, 1835 Neil Avenue  
Columbus, OH 43210 **Tel:** (614) 292-7379  
[neurosciencemajor.osu.edu](http://neurosciencemajor.osu.edu)

In order to declare a minor in Neuroscience, you must meet with an advisor in the Neuroscience Major Program. Call **292-7379** to schedule an appointment.

Neuroscience is a scientific discipline that investigates the organization, development, and function of the nervous system, and its relationship to behavior, cognition, and neurological or neuropsychiatric disorders. The minor consists of 5 classes (15 minimum credit hours) designed to give students a strong foundational and broad exposure to the neuroscience area. Students must complete two Core Requirement courses and the remaining three courses are taken from the courses listed in the Elective Requirement section. This course work should be chosen in consultation with a neuroscience academic advisor.

**Core Requirement (Take Both Courses, 6 credits)**

The two foundational courses listed below are required of all neuroscience minors.

|         |      |   |
|---------|------|---|
| Psych   | 2313 | Introduction to Behavioral Neuroscience |
| Neurosc | 3000 | Introduction to Neuroscience            |

**Elective Requirement (Take 3 Courses, 15 credits)<sup>1</sup>**

At least (2) of the (3) Elective Requirement courses must be at the 3000-level or above.<sup>2</sup>

*Please note:*

<sup>1</sup>Students may count only (1) course with a (\*) next to it toward the minor. While these courses are not neuroscience course per se, they can nonetheless provide curriculum enhancement to the minor.

<sup>2</sup>Chem 2211 will be counted as a 3000-level course.

|            |       |  |
|------------|-------|--|
| Neurosc    | 3050  | Structure & Function: Nervous System                                 |
| Neurosc    | 3010  | Neurophysiology  |
| Psych      | 2305  | Drugs and Behavior   |
| Psych      | 2310  | Sensation and Perception   |
| Psych      | 2312  | Learning, Memory, and Cognition                                      |
| Psych      | 2513  | Intro to Cognitive Neuroscience                                      |
| Psych      | 4501  | Advanced Behavioral Neuroscience                                     |
| Psych      | 5600  | Psychobiology of Learning  |
| Psych      | 5606  | High-Level Vision  |
| Psych      | 5613H | Biological Psychiatry  |
| Psych      | 4623  | Biological Clocks & Behavior   |
| Psych      | 4644  | Hormones & Behavior  |
| Psych      | 5898  | Seminar in Behavioral Neuroscience                                   |
| Psych      | 5614  | Cognitive Neuroscience   |
| EEOB       | 4550  | Neurobiology of Behavior   |
| CSE        | 5526  | Introduction to neural Networks                                      |
| *Biochem   | 4511  | Intro to Biological Chemistry  |
| *MolGen    | 4500  | General Genetics   |
| *Pharmacol | 4600  | General Pharmacology Philosophy                                      |
| *Philos    | 5800H | Ethical Concepts in Health Care, Research, Policy, and Practice      |
| *Chem      | 2211  | Quantitative Chemical Analysis for Biological and Medicinal Sciences |

**\*Research**

Only (1) neuroscience related Individual Studies (3193) or Research (4998) experience may count as a class toward the elective requirement. The experience must be equal to 3 semester credit hours, and the use of this experience toward the minor must be pre-approved by a neuroscience advisor.

In some cases, prerequisites for courses may be waived for minors, so students are advised to consult regularly with their neuroscience advisor.

**Arts and Sciences minor program guidelines**

The following guidelines govern minors.

Approval required:

The minor program must be approved by an advisor in the Neuroscience Major Program and filed with the College or School Office.

Required for graduation

No

Classes/Credit hours required

5 classes/15 minimum hours

Transfer courses allowed

A maximum of 1 class/3 semester hours

Overlap with the GE

Permitted, unless specifically disallowed by an individual minor program.

Overlap with the major

- Not Permitted
- The minor must be in a different subject than the major.
- Courses cannot count on a minor and on a major.

Grades required:

- Minimum C- for a course to be listed on the minor.
- Minimum 2.00 overall GPA is required for the minor.
- Pass/Non-Pass courses cannot count on the minor.

Filing the minor program form:

The minor program form must be filed at least by the time the graduation application is submitted to a college/school counselor.

Changing the minor:

Once the minor program is filed in the College Office, any changes must be approved by a Neuroscience major advisor.

College of Arts and Sciences  
Curriculum and Assessment Services  
154 Denney Hall, 164 W. 17<sup>th</sup> Ave.  
<http://artsandsciences.osu.edu>  
Rev. OAA 5-26-10, DH 6-11-10  
Update 8-08-11 DH

The Ohio State University  
College of Arts and Sciences

## Interdisciplinary Neuroscience Minor (NEURSC-MN)

Advising and Academic Services  
Arts and Sciences  
100 Denney Hall, 164 West 17<sup>th</sup> Ave  
Columbus, OH 43210  
Tel: (614) 292-6961

In order to declare a minor in Neuroscience, you must meet with an advisor in the Neuroscience Major Program. Call **292-7379** to schedule an appointment.

The interdisciplinary minor in Neuroscience provides a coherent framework for the courses and undergraduate research opportunities that exist within multiple departments and colleges for students interested in this area.

Neuroscience, at its most basic definition, involves the study of the brain, its development, how it processes information, and the impact on behavior. Other areas of Neuroscience include neuropsychiatry, neurophysiology, neuroanatomy, neurochemistry, psychobiology, behavioral neuroscience, sensory and neuroimmunology, and molecular and cellular neuroscience.

The Neuroscience minor consists of 25 credit hours of course work. Two foundational courses are required, and the remaining credit hours may be taken from a range of advanced courses that should be chosen in consultation with an academic advisor: Once your advisor has approved your Minor Program Form, you should file it with your college or school counselor.

**Required foundational courses 9 credit hours)**

Psychology 313 – Introduction to Behavioral Neuroscience (5)  
Neuroscience 300 – Introduction to Neuroscience (4)

**Advanced Electives (16 credit hours)**

Select courses from the following list to total 16 credit hours.. It is expected that courses will come from a variety of areas. Prerequisites for courses may be waived for minors, so students are advised to consult regularly with their mentor or advisor.

Chemistry 211 – Quantitative Chemical Analysis for Biological and Medicinal Sciences (5)  
EEOB 632 – Neurobiology (3)  
Pharmacology 600 – General Pharmacology (3)  
Pharmacy 200 – The Rational & Irrational Use of Drugs (3)  
Philosophy 580H – Ethical Concepts in Health Care Research, Policy, and Practice (5)  
Psychology 305 – Drugs and Behavior (4)  
Psychology 312 – Learning, Memory, and Cognition (4)  
Psychology 501 – Advanced Behavioral Neuroscience (4)  
Psychology 513 – Intro to Cognitive Neuroscience (4)  
Psychology 600 – Psychology of Learning (5)  
Psychology 603 – Visual Perception (3)  
Psychology 606 – High-Level Vision (4)  
Psychology 613H – Biological Bases of Psychopathology (4)  
Psychology 617 – Neural Network Models in Psychology (4)

The following courses are a sample of individual study/research courses that may be included on the minor with the pre-approval of the neuroscience advisor ( No more than 3 hours of any 693 or 699 research experience can count on the minor).

EEOB 693 – Individual Studies (1-3)  
Molecular Genetics 693 – Individual Studies (1-3)  
Neuroscience 693 – Individual Studies (1-3)  
Psychology 699 – Undergraduate Research (1-3) with a Behavioral Neuroscience faculty member in the Psychology Department

**Arts and Sciences minor program guidelines**

The following guidelines govern minors.

Required for graduation No

Credit hours required A minimum of 25

Transfer credit hours allowed A maximum of 10

Overlap with the GEC Permitted, unless specifically disallowed by an individual minor program.

Overlap with the major Not allowed and

- The minor must be in a different subject than the major.
- The same courses cannot count on the minor and on the major.

Overlap between minors Each minor completed must contain 20 unique hours.

Grades required

- Minimum C- for a course to be listed on the minor.
- Minimum 2.00 cumulative point-hour ratio required for the minor.
- Course work graded Pass/Non-Pass cannot count on the minor.

Approval required The minor program must be approved by an advisor in the Neuroscience Major Program and filed with the College or School Office.

Filing the minor program form The minor program form must be filed at least by the time the graduation application is submitted to a college/school counselor.

Changing the minor Once the minor program is filed in the College Office, any changes must be approved by a Neuroscience major advisor.

College of Arts and Sciences  
Curriculum and Assessment Services  
154 Denney Hall, 164 W. 17<sup>th</sup> Ave.  
<http://artsandsciences.osu.edu>  
Rev. OAA 5-26-10, DH 6-11-10  
Update 8-08-11 DH

## Transition Policy

No student pursuing the neuroscience minor who began the program under quarters will have progress toward their graduation impeded by the transition to semesters. Graduation requirements for the semester version of the neuroscience minor will begin in summer quarter 2012. Students who pursue the minor during this transition will have all previous quarter courses count as equivalents to the new semester courses that have taken their place in the new minor. Student will be required to complete the two core/foundational courses (Psychology 313 and Neuroscience 300), as well as three advanced level courses. This structure is congruent and proportional with both versions of the neuroscience minor. During autumn quarter 2011, all students will be contacted by a neuroscience advisor for the creation of an official academic plan to aid students in completing the minor in a timely manner.



Neuroscience Major

43 Psychology Building  
1835 Neil Avenue  
Columbus, OH 43210

Phone (614) 292-7379  
neurosciencemajor.osu.edu

September 16, 2011

CCI Committee  
The Ohio State University  
Columbus, Ohio 43210  
**Re: CCI: Neuroscience Minor**

Dear Committee Members:

Thank you very much for taking the time to read our neuroscience minor proposal so carefully and for the valuable feedback. This cover letter details our responses to each of the issues that you raised. In terms of structure, each revision/clarification request raised by the committee will be broken down into three parts: **"Issued Raised"** by the committee, **"Neuroscience Response"** to the issue, and finally a **"Location of Correction"** directing you to the document in which corrections/edits are to be found. We believe that the neuroscience minor has been strengthened by this process.

Sincerely,

A handwritten signature in blue ink, appearing to read "Charlie C. Campbell" with "PhD" written at the end.

Dr. Charlie C. Campbell  
Coordinator, Neuroscience Major

- 1) **Issue Raised:** Remove the support letters referring to the Neuroscience Major.
  - i. **Neuroscience Response:** Support letters have been deleted
  - ii. **Location of Correction:** *Neuroscience Program Courses document*
  
- 2) **Issue Raised:** Change reference to GEC on the Semester Advising Sheet to GE.
  - i. **Neuroscience Response:** GEC has been changed to GE in all instances  
**Location of Correction** *Semester Advising Sheet*
  
- 3) **Issue Raised:** There is a lack of congruence between the courses listed on the Semester Advising Sheet and the Neuroscience Program Courses document.
  - i. **Neuroscience Response:**
    1. Psych 4644, Psych 4623, Psych 2310, Psych 2312, Pharmacol 4600, Philos 5800H, and Chem 2211 are listed on both documents.
    2. Psych 4513 has been changed to Psych 2513 on both documents.
    3. EEOB 4007 has been removed and replaced with EEOB 4550 on both documents (semester version of EEOB 632).
    4. Psych 4600 has been changed to Psych 5600 on both documents.
    5. Psych 5618 was removed from the Semester Advising Sheet, but retained on the Neuroscience Program Courses document due to its relevance to the Neuroscience Major.  
**Location of Correction** *Neuroscience Program Courses and Semester Advising Sheet*
  
- 4) **Issue Raised:** Potential issue was raised concerning the completion of the minor without significant upper-level course work due to the stratification of course offerings.
  - i. **Neuroscience Response:** Addition:  
At least (2) of the (3) Elective Requirement courses must be at the 3000-level or above.<sup>2</sup>  
*Please note:*  
<sup>2</sup>*Chem 2211 will be counted as a 3000-level course.*  
**Location of Correction** *Semester Advising Sheet*