PART A

I. Information

A. Exact Program Designation: Neuroscience Minor

B. Department(s)/Program(s): Biology and Psychology

C. Administrative Home: Biology

C. College: Arts and Sciences

D. Degree Title: Minor: Neuroscience, Liberal Arts

II. Unit Approvals

<table>
<thead>
<tr>
<th>Approval</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td>2/28/16</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>2/29/16</td>
</tr>
</tbody>
</table>

A. Department Chair/Program Director

Department Chair/Program Director

B. Dean of College

C. Chair, Academic Policies Committee

D. Chair, University Senate
PART B

I. PROGRAM IDENTIFICATION AND DESCRIPTION
   A. Exact Designation of Proposed Program: Minor: Neuroscience, Liberal Arts
   B. Department(s)/Program(s): Biology and Psychology
   D. Administrative Home: Biology
   D. College: Arts and Sciences
   E. Program Objectives: To give students an opportunity to explore the interdisciplinary field of neuroscience.
   F. Timetable for Initiation: Fall, 2016.

II. CONTEXT
   A. History of Program: Provide a brief chronology of any predecessor program(s) (e.g., minor currently available under existing degree).
      None at present. A proposal to create a new comprehensive major in Neuroscience is in process.
   B. Instructional Setting of Program: Describe the relationship of the proposed program to present programs. State why the proposed program cannot be offered within existing minors.
      Neuroscience is the study of the brain and all its functions. That includes how the brain develops and ages, how it thinks, how it processes complex sensory information, and how it controls our movements. The nature of the field of neuroscience is interdisciplinary. It spans biology and psychology and includes philosophy and clinical areas.
   C. Relation to Mission Statement and Academic Plan: Describe how the proposed program relates to the mission and goals of the Baccalaureate Degree at UWEC.
      The program will be rigorous and strong. It will be a good match for the mission and goals of the baccalaureate degree at UWEC. Through this program, students will gain knowledge of the natural and social worlds and interactions between them. They also will develop and utilize skills in inquiry and analysis, critical thinking, and problem solving.

III. NEED
   A. Student Demand—Future Enrollment: Indicate anticipated enrollment. Is this based on students who previously opted for topical minors? What majors would be expected to elect this minor?
We anticipate 15-25 students per year will enroll in this program if it is the only neuroscience option available for students. If a neuroscience major is approved at UW-Eau Claire, we anticipate that about 5-10 students per year will chose this minor. This is based on: 1. A substantial number of students who have asked about it and have registered in a neuroscience topical minor. 2. A strong favorable response from an impromptu email survey conducted by Doug Matthews in the UWEC Psychology department. He sent out a question to all psychology majors asking them if our University were to offer a Neuroscience major, would they want to enroll in it. He got 75 positive responses to that question. Granted, he was asking about interest in a major, but I think it nevertheless supports the notion that there is a great interest in this field which would also apply to a minor.

B. Special Interests in the Proposed Program: Describe any special interest in the program by local groups, state agencies, industry, research centers, etc.

There is a great demand for people with a background in neuroscience. The pharmaceutical industry is highly focused on the development of neuroactive drugs for a wide range of neurological conditions. Research in this area employs many people with various levels of formal education from the bachelor's level to masters, M.D. and Ph.D. levels. Neurotechnology is a large and growing industry that develops neuro- prosthetics, sensors, and other therapeutic devices for people with brain-based disorders. This area constitutes an ever increasing proportion of the medical technology industry and in 2016 will generate about $7 billion in products.

Virtually every major research university in our country and abroad has a Ph.D. program in neuroscience. As of 2010, neuroscience was the single largest area in which the National Institutes of Health supported Ph.D. research, with over 400 getting funds that year, more than twice the number of any other area. Many UWEC graduates have matriculated into these programs. Having a minor program here at UWEC would serve students who are aiming for neuroscience graduate programs.

As a final indicator of the demand in this area, NIH funding for research in brain disorders in 2015 was over $3.5 billion, the third highest level of support for any disease category, just below cancer and infectious diseases.

IV. CURRICULUM

A. Course Requirements Sequence: Provide a listing of requirements and sample sequence of courses, marking with an asterisk new courses proposed. Indicate course level by designating proposed courses as 100-200 (Freshman-Sophomore), or 300-400 (Junior-Senior).

Total of 24 credits required

Foundation Courses:
IDIS 125 (Brain: Intro to Neuroscience) 4
Biol 221 (Biological Foundations I) 4
Biol 319 (Animal Form and Function) 4
A minimum of three core courses chosen from:
Biol 350 (Systems Neuroscience)  4
Biol 351 (Systems Neuroscience Lab)  2
Psyc 374 (Cognitive Neuroscience)  3
Psyc 375 (Behavioral and Clinical Neuroscience)  3

Electives:
CSD 440 (Neurological Aspects of Communication)  3
Biol 365 (Animal Behavior)  4
Biol 380 (Endocrinology)  4
Phil 343 (Philosophy of Mind)  3
Psyc 376 (Psychology of Perception)  3
Psyc 377 (Psychopharmacology)  3
Psyc 379 (Cognitive Psychology)  3

Notes:
1. Biology majors may not count Biol 221 toward this minor.
2. Biol 221 has a pre/co-requisite of Chem 103.
3. Up to 3 credits of approved neuroscience-related research from the following courses may be applied to the minor with consent of the advisor: Biol 399, Biol 497, Biol 499, Psyc 399, and Psyc 499.
4. A maximum of 12 credits from the minor may count toward the Biology or Psychology majors.

B. Interrelationship with Other Curricula: Give a brief statement about how the new program will provide support for and draw support from other campus programs.

This program will be an important recruiting tool for UW-Eau Claire. Prospective students are very interested in pursuing this field of study. Undergraduate neuroscience programs are a large draw wherever they have been established.

V. PERSONNEL

A. Faculty Participating Directly in the Program: List present faculty members who will participate directly in the proposed program.

Dan Janik, David Jewett, David Leland and Doug Matthews.

VI. ACADEMIC SUPPORT SERVICES

A. Library Resources: How adequate are current library resources for the proposed program? Indicate additional library resources, the estimated cost, and how costs are to be accommodated.

They are adequate; no new resources are needed.
B. **Special Resources:** Identify special resources, such as computers, unique laboratories, equipment, etc., currently available. Indicate special resources needed, the estimated costs to support the proposed program, and how these costs are to be met.

None needed.

**VII. FACILITIES - EQUIPMENT**

A. **Facilities and Capital Equipment:** List and comment on facilities and capital equipment currently available (other than those listed in VI. B.).

There is ample equipment to support this program in the neuroscience lab in 306 Phillips Hall. It has 6 electrophysiology rigs, microscopes, neurohistology equipment, imaging systems, brain models and brain specimens.

B. **Additional Facilities Required:** List and comment on facilities (special classrooms, laboratories, additional space, minor construction, etc.) needed.

None needed.

**VIII. FINANCE**

A. **Budgetary Requirements:** Provide a description of funding requirements and any budgetary allocation required to initiate this program and to fund it for the first two biennia.

No additional funding needed as this minor is comprised of existing courses offered on a regular basis.

B. **Resource Reallocation:** If the funding requirements outlined above are to be met, in part or in total, by reallocation of resources, indicate the source and the amount as well as identify courses or program areas that will be eliminated. Append documented evidence of consultation with Deans and Department Chairs/Program Directors.

N/A

C. **Student Financial Aids:** List any special student aids (scholarships, etc.) which are believed to be available to students in the proposed program.

None known.

D. **Research Support:** Indicate sources and amounts of extramural funding support expected to be available for research related to the proposed program.

The amount of extramural funding related to the Neuroscience minor depends on the faculty associated with the program. In many cases, sufficient funding can be gotten from internal sources. There are also major external funding agencies that provide billions of dollars each
year for neuroscience research including NIH, the National Science Foundation, and many non-governmental sources.