This proposal is a duplicate. The addition of this course was submitted and approved in April 2006. To view the original curriculum proposal in the 2005-2006 catalog, please type or select the requested information. Print completed forms, add appropriate paper attachments, and route through MSU’s curricular process for recommendations and decisions.

College: Social and Behavioral Sciences  
Department: Psychology  
Program: CIP #  
Type of Change: COURSE PROPOSALS  
Proposed: New Course  
Title Current:  
Title Proposed: Neuroscience  
24-Char. Abbrev: PSYC 4523

Effective Date of Change: Academic Year 2006-07  
(For Office Use Only)

Include a course or program description for the Bulletin (30-40 words maximum for courses, 100 for programs):

The goal of neuroscience is to understand the human mind. This goal is approached by revealing the brain processes involved in how we perceive, think, remember, and move. Brain development, communication, and plasticity at the neural level are all described.

Rationale or Justification for change:

Adding this course will broaden our curricular offering in the area of brain science. This will give students the option of an advanced course in this field. Our catalog currently lists a neuropsychology course (PSYC 4523). Even though this course may sound similar to neuroscience, the two are intrinsically different. Neuropsychology deals with behaviors and disorders (and testing used to classify disorders) as seen in a clinical setting, whereas neuroscience describes all behavior in terms of its neural genesis.

***For General Education or Cultural Diversity Courses Only***

General Education Course:  
GE Category #  N/A  
GE Category Name (Maximum of 3 Categories)  
N/A  
N/A

Cultural Diversity Course:  
(Please check one.)  
Core (At least 75% devoted to topics of race, gender, sexual orientation, age, class, and disabilities as they occur in United States Society.)  
Related (At least 25% devoted to the above topics or to a global perspective on topics related to African American, Asian, Hispanic, and Native American inhabitants of the United States.)

? For Writing Intensive Courses, attach a description of the kind and quantity of writing.  
? For Upper Division Courses, include a description of the respects in which it is broad and general rather than narrow and specific, and so suitable as GE.

Attach paper copies of the following:

a. Syllabus or course outline.
b. Course's student learning outcomes associated with each GE competency or CD designation.
c. List of strategies to be used to assess students' achievement of each GE competency or CD designation.

***For New Courses***

Instructional Type: Lecture  
Course is an elective.  
Grading Format: Grade P/N  
Course is required for program  
Pre- or Co-requisites: PSYC 421  
Other courses are being changed or eliminated. (Explain.)

Course content or title is similar to courses in other departments. (Attach copy of letter of agreement with other program(s) contacted. Indicate the nature of the discussions and/or resolution of differences or potential conflicts.)

Attach paper copies of the following:

a. Syllabus or course outline.
b. Course's student learning outcomes.
c. A list of resources required to offer and support this course.
d. A description of how teaching this course will affect department staffing.
e. If 400/500 level course, an explanation of added expectations of graduate students.
# Minnesota State University, Mankato
## Curriculum Proposal

### ***Signature Page***

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Curriculum Proposal
PSYC 4/523 – Neuroscience
Department of Psychology

Course Description: The goal of neuroscience is to understand the human mind. This goal is approached by revealing the brain processes involved in how we perceive, think, remember, and move. Brain development, communication, and plasticity at the neural level are described.

A. Syllabus or course outline.
The course outline will be as follows:
- Introduction
- The neurobiology of behavior
  - Brain and behavior
  - Nerve cells and behavior
  - Genes and behavior
- The neuron
  - How it works
  - Receiving neural signals
  - Sending neural signals
- The synapse
  - Overview of synaptic transmission
  - Neurotransmitters
  - Modulation of the signal
  - Drug interaction sites
- Neural development
  - Proliferation, migration, differentiation, myelination, and synaptogenesis
  - Formation and regeneration of synapses
  - Sensory experience and fine-tuning
  - Sexual differentiation
  - Aging and disease
- Cognition
  - Anatomical organization
  - Functional organization
  - Association areas of the cortex
  - Internal representations
- Perception
  - Coding sensory information
  - Bodily senses
  - Touch, taste, smell, hearing, vision
  - Perception of pain
- Movement
  - Organization of movement
  - Reflexes and voluntary movement
  - Locomotion
  - Vestibular system and posture
• Arousal and emotions
  o Consciousness, sleeping, and dreaming
  o Seizures and epilepsy
  o Emotional states and feelings
  o Motivation and addiction
• Language and thought
  o Language and aphasias
  o Disorders of thought and mood
• Learning and memory
  o Cellular mechanisms of learning
  o Memory systems
  o Biological basis of individuality

B. Course’s student learning outcomes.
 Upon the completion of this course, students will have a basic understanding of the following concepts:
• Development of the brain
• Communication between nerve cells in the brain
• Origination of different perceptions and motor acts resulting from interconnected patterns of nerve cells
• Modification of nerve cell communication by experience
• Alterations in nerve cell communication resulting from disease

C. A list of resources required to offer and support this course.
 No additional resources are required for this course.

D. A description of how teaching this course will affect department staffing.
 This course will be offered either once a year or once every other year. Currently, there are two faculty members qualified and interested in teaching this course. Since the course will be split between these faculty members and is offered only occasionally, no changes in departmental staffing are anticipated.

E. If 400/500 level course, an explanation of added expectations of graduate students.
 Every student taking the course will be expected to write an original research paper describing the neural basis of a known disorder. Additional requirements for this paper will be included for graduate students, as well as an oral presentation of their paper.