

NEW COURSE PROPOSAL

PROGRAM AREA BIOLOGY

1. **Catalog Description of the Course.** *[Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of ___ units); time distribution (Lecture ___ hours, laboratory ___ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.]*

BIOL 423. CELLULAR AND MOLECULAR NEUROBIOLOGY (3)

Three hours of lecture per week.

Prerequisites: CHEM 122; BIOL 300 with a grade of C or better.

Study of the nervous system at cellular and molecular levels including cellular structure of neurons and their function and interactions, neurotransmitters and their function and regulation, chemical agents and their effects on neuronal cells and normal responses by the cells and the molecules of the nervous system and their responses under adverse conditions.

2. **Mode of Instruction.**

	Units	Hours per Unit	Benchmark Enrollment
Lecture	<u>3</u>	<u>1</u>	<u>30</u>
Seminar	<u> </u>	<u> </u>	<u> </u>
Laboratory	<u> </u>	<u> </u>	<u> </u>
Activity	<u> </u>	<u> </u>	<u> </u>

3. **Justification and Learning Objectives for the Course.** (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) *[Use as much space as necessary]*

BIOL 423 is an elective course for Biology students. This is an advanced course which will be of interest to students desiring an in-depth treatment of neurobiology at the molecular level.

Students who successfully complete this course will be able to:

- Describe the function and structure of cells comprising the nervous system
- Explain, at the molecular level, chemical and electrical signaling in the nervous system
- Explain how genes are regulated in the nervous system
- Generate a hypothesis from a set of observations and then design experiments to test the hypothesis

4. **Is this a General Education Course** YES NO

If Yes, indicate GE category:

A (English Language, Communication, Critical Thinking)	
B (Life Sciences)	
C (Fine Arts, Literature, Languages & Cultures)	
D (Social Perspectives)	
E (Human Psychological and Physiological Perspectives)	

5. **Course Content in Outline Form.** *[Be as brief as possible, but use as much space as necessary]*

Cells of the nervous system

Electrical signaling

Molecular approaches to diseases of the nervous system