

Dr. Gannon

Bailey Science Center 2.032, 229-333-5759

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## Syllabus

The objective of this course is to provide students with the knowledge of how the brain functions at the cellular level. We will examine how the nervous system operates while completing routine tasks such as maintaining posture or more sophisticated skills such as communicating with language. This course will also introduce students to some of the extremely sophisticated technology used by neuroscientists to explore the functions of the brain. Finally, this course will contrast the function of the nervous system in normal and pathological states in order to demystify the etiology of neurological diseases.

Topics will be divided into four general areas: neural signaling, sensory input, motor output, and modification of neural circuits in complex brain functions. The accompanying lecture schedule provides a more detailed calendar of topics.

### Knowledge-Based Goals for Students:

- 1) Know the general anatomy of the nervous system and associated cell types;
- 2) Know the sensory pathways for input into the CNS;
- 3) Know the motor pathways for output from the CNS;
- 4) Know the interactive processes in coordinating sensory input and motor output;
- 5) Know chemical transmission and potential modifications using pharmaceuticals;
- 6) Know neuronal plasticity and potential uses/limitations of cell replacement;
- 7) Know the basics of neurological and motor diseases.

These goals support the Department of Biology Educational Outcome #3 and VSU General Educational Outcomes #5.

Assessment: Four in-class exams (multiple choice/short answer/essay)

Exam I	20 % of Grade
Exam II	25 % of Grade
Exam III	30 % of Grade

Required Text: *Neuroscience*, by Purves et al., 4th Edition

BIOL 3700 Neuroscience