

# Fundamentals of Neuroscience

## COURSE SYLLABUS (abbreviated)

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**COURSE NUMBER** GMS6007

**CREDIT HOURS** 2 credit hours

### COURSE DESCRIPTION

Fundamentals of Neuroscience (GMS6007) covers the basic background required to understand current topics in the field of Neuroscience, a rapidly changing area that impacts several fields of medicine including public health, public policy, and sports medicine, as well as on the military and the pharmaceutical industry. This course is organized into ten modules, each of which covers a key area of Neuroscience. Each module includes a Beyond the Basics unit that ties the basic information covered in the module to relevant problems and exciting new developments in the Neurosciences. Our goal is to help students obtain a working knowledge of the field of Neuroscience that will allow them to appreciate the significance of emerging findings in this field and enable them to pursue more in-depth studies of specific Neuroscience topics.

This course represents the first in a series of courses that can be completed to earn a graduate certificate in Biomedical Neuroscience. Qualified students may also take this course and other courses in this series without electing to earn a graduate certificate.

### COURSE FORMAT

This is a 14-week, online course. It is divided into 10 modules, each of which is designed to be completed in one week and covers a specific topic within the Neurosciences. Each module is broken down into 3-7 subunits in an effort to improve the accessibility of the information covered in the module. Each unit contains an online reading assignment, a video lecture in VoiceThread format, and a self-check quiz to allow students to assess their understanding of the unit material. Each VoiceThread lecture is ~10-15 min in duration but can easily be viewed slide-by-slide. The ten modules are completed sequentially and each module will be considered complete when the student has completed all unit reading assignments, self-check quizzes, the Beyond the Basics VoiceThread assignment, and the online test for that module. The self-check quizzes, VoiceThread assignments, and module tests will constitute 60% of the student's final grade. The remaining 40% of the final grade will be derived from two projects that will be completed and turned in during weeks 7 and 13 of the course. Students will select a topic for each project that is related to the topics covered in the weeks preceding each project assignment and will prepare a VoiceThread on that topic that will cover a brief overview of the topic, an in-depth presentation of the topic, a discussion of the topics relevance to Neuroscience, and possible future directions that could be explored in the topic area. The topics chosen by the students will be approved prior to students initiating work on the project and the final submitted projects will be evaluated by the course director using a grading rubric and by student peer review.

## **TARGET AUDIENCE**

This online course is tailored for asynchronous distance learners. Scheduled synchronous interactions using online communication platforms between the students and instructor will be offered by request throughout the course. This course is designed to provide a foundation in the Neurosciences for students who either wish to refresh their working knowledge of this field or have not yet explored the Neurosciences. The target audience for this course is working professionals who are interested in improving their understanding of the field of Neuroscience and post-baccalaureate students who either want to pursue a career in medicine or biomedical research or who are interested in improving their understanding of the Neurosciences. Interested advanced undergraduate students are encouraged to inquire about registration.

## **PREREQUISITES**

This course requires a BA or BS and a strong science foundation with at least 5 full semesters of course work in Biology and/or Chemistry, and Psychology. A minimum junior/senior undergraduate GPA of 3.0 is required for admission.

## **COURSE DIRECTOR AND INSTRUCTOR**

Sue Semple-Rowland, PhD. Professor of Neuroscience  
Director of the Biomedical Neuroscience Certificate Program  
Director and Instructor of GMS6007

## **GENERAL COURSE SCHEDULE**

This is a 14 week course that is offered during the Fall and Spring terms. One course module will be completed each week. In addition to readings, assignments, quizzes and tests, students will complete two course projects, one midway through the course and one at the end of the course.

## **COURSE GOALS / LEARNING OUTCOMES**

Neuroscience is the science of how the nervous system functions, and is the basis for understanding nearly all aspects of modern medicine and the biomedical research sciences.

This course will provide students with the following -

- A foundational understanding of the basic anatomy, organization, and cells that make up the central nervous system
- Knowledge of the anatomy and functions of the primary sensory and motor systems
- Basic understanding of the function of higher order Neuroscience systems including language, cognition, and memory.
- Overview of nervous system development.

## **LEARNING RESOURCES**

- Assigned online readings from **Neuroscience**. 2nd edition Purves, D, Augustine GJ, Fitzpatrick D, et al., editors. Sunderland (MA); Sinauer Associates; 2001. Students may also elect to purchase this textbook. The most recent version of this text is the 5<sup>th</sup> edition.

- Recorded VoiceThread lectures accessible through the course website. Students are encouraged to post questions they have about the material presented directly within the lectures using the text, audio, or video + audio commenting feature of VoiceThread. These questions will be answered by the instructor.
- Beyond the Basics units associated with each learning module that are delivered using Blendspace. These units are comprised primarily of TedTalks, the topics of which were selected based on their relevance to the basic content covered in the module.
- Each unit contains a self-check online quiz (3-6 points) that is designed to reinforce the lecture content. These quizzes will contain questions that will serve as examples of those found on the module tests.
- Discussion boards will be available to students to enable them to posting questions about the course materials.
- Online synchronous office hours will be available as requested and will be scheduled so that students with busy schedules can participate.

### **ASSIGNMENTS, EXAMINATIONS AND GRADING**

For each of the 10 modules, students will complete 3-7 self-check unit quizzes, a Beyond-the-Basics VoiceThread assignment involving posting of audio or audio + video VoiceThread answers to 3-4 questions related to the Beyond-the-Basics unit and responding to the posts of other students, and a module test. The Module tests will consist of multiple choice, matching, identification, and short answer questions. These tests will be timed and questions will be randomized. It is recommended that you take the online tests during UF Help Desk hours whenever possible so that you can obtain assistance if needed. The scores from the self-check quizzes, the Beyond-the-Basics assignments, and the Module tests will be weighted and will represent 60% of your course grade.

The remaining 40% of your course grade will come from two graded VoiceThread projects that will be completed midway through and at the end of the course. Students will be given a grading rubric for these projects so that they will understand what is required to successfully complete these projects and how they will be graded.

Unit Self-check quizzes – 5%	}	60% Grade
Beyond-the-Basics Assignments – 15%		
Module tests – 40%		
VoiceThread Midterm and Final Projects		40% Grade

#### ***Assignments, quizzes and tests will not be accepted late.***

As a rule, unless a student has a medical excuse or a confirmed family emergency with appropriate documentation, late assignments, quizzes, and tests will not be accepted. We recognize that personal circumstances arise that may interfere with a student's ability to meet a deadline. If this occurs, please let the instructor know as soon as you know. We will not be receptive to retrospective requests for deadline extensions. Your emails will be responded to within 24 business hours (typically sooner).

If you encounter technical difficulties, be sure to include a UF helpdesk ticket number in your request for a deadline extension if you plan to request one. The extension request **MUST** be submitted within 24 hours of the technical difficulty.

## **GRADING SCALE**

A numerical grade will be given at the end of the course and will be scored as follows:

93-100% = A  
90-92% = A-  
87-89% = B+  
83-86% = B  
80-82% = B-  
77-79% = C+  
73-76% = C  
70-72% = C-  
67-69% = D+  
63-66% = D  
<63% = E

## **GRADING POLICY**

Students will be expected to complete all requirements for one module each week. There will be no deadline extensions for completion of a module unless granted by the course director prior to the scheduled completion date. Failure to submit a module assignment or complete a module test by the course deadline will be recorded as a zero. The midterm and final VoiceThread projects will be due one week after assigned.

## **REQUIRED TECHNOLOGY**

- Laptop or desktop computer equipped with microphone and video camera. The microphone and video camera will be used to post comments to VoiceThread for the Beyond-the-Basics assignments and to create the VoiceThread projects. There is a free VoiceThread app that is available for iOS and Android devices that can be used to view and post comments to course threads. It is strongly recommended that students use laptop or desktop computers when working on their VT projects for this course.
- High speed, broad band internet connection such as DSL or cable. A broadband Internet connection is strongly recommended. Slower connections should still be able to access e-Learning, but will take longer to load.

**SPECIAL NOTE:** Some users with satellite Internet service may find their online courses do not load quickly or consistently due to satellite network design issues.

- Installation of most recent version of Adobe Flash player. Adobe Flash is required to join synchronous online course meetings that will be scheduled using Big Blue Button, a synchronous meeting platform that is integrated into Canvas. Adobe Flash player can be downloaded from [this website](#). Participation in synchronous meetings will require a microphone. Use of a video camera is optional but is highly recommended.

For specific questions about browser compatibilities and general questions about e-learning at UF please go to <https://wiki.helpdesk.ufl.edu/FAQs/E-Learning>.

## **STUDENT SUPPORT SERVICES**

As a student in a distance learning course or program you have access to the same student support services that on campus students have. For course content questions contact your instructor.

For any technical issues you encounter with your course please contact the UF computing Help Desk at 352-392-4357. For Help Desk hours visit: <http://helpdesk.ufl.edu/>.

For a list of additional student support services links and information please visit: <http://www.distance.ufl.edu/student-services>

### Special Accommodations

Students requesting disability-related academic accommodations must first register with the Disability Resource Center (<http://www.dso.ufl.edu/drc/>). This should be done as early in the semester as possible. The Disability Resource Center will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. The Disability Resource Center is located in 001 Building 0020 (Reid Hall). Their phone number is 352-392-8565.