

Introductory Neuroscience

“Real-World” Curriculum

Fall 2010

Monday, Wednesday, & Friday 2:05-2:55 in MS&E G011

Instructor

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Welcome to BMED/BIOL 4752, Introductory Neuroscience! This class is unusual: My philosophy is that *real-world assignments* are much more meaningful, and will serve you better in the future, than memorizing a lot of facts and details that you can easily look up. All of the special assignments will be preparation for the Big Assignment: writing a Wikipedia article about a neuro topic. Since this is an elective, I will assume you are here because you are highly interested and motivated to learn. Drop now if you are not. Despite the word "introductory" in the title, this is not an easy class. There are a lot of assignments and a lot of reading, but most students in previous years really enjoyed them, and felt they were well worth the effort. I am always open-minded to making the course better, so feel free to make suggestions for improvement. I value in-class discussions and welcome any questions; **no question is too dumb to ask.**

Course Objectives

1. Get introduced to the components of the nervous system and how they functionally interact.
2. Appreciate the complexity of higher-order brain functions and begin to understand their biological basis.
3. Synthesize new connections, ideas and approaches about neuroscience research, drawing from examples given in lectures, readings and the textbook.
4. Independently obtain, report, and share with the Real World, in written and oral form, topical neuroscience information.
5. Appreciate neuroscience research in the Real World, and how much we don't know about the nervous system, and learn to be skeptical of what is claimed.

NOTE!

- Attendance each day and participation in class activities are required. Why? Because the textbook and slides are not a substitute for lecture material. Our class discussions will comprise most of what you will be tested on. Several sessions will be presented by other Special Guest neuroscientists who have donated their time to educate you. Attendance will be taken using PRS Clickers. Make sure you know how to use yours.
- Regarding class participation, If you are a quiet type, you must make a special effort to contribute by asking questions and bringing up items for discussion. Come see me if you need help on that. I will learn

your names and take notes on who has participated. I may call on random people to ask their opinion on something or get them involved in a discussion.

- Please bring your Interwrite PRS RF clicker and spare batteries to **every** class. They are available at the bookstore. Remove and discard the screw (right now!) that prevents you from quickly replacing the 3 AAA batteries. There will be random short clicker quizzes, usually worth a fraction of one point (unless you are absent or late and miss the quiz, see below).
- As listed in the Schedule, there will be special invited experts. Discipline yourself to be on time and awake for these Special Guest speakers, out of respect for the effort they made to come to Tech and educate you.
- If you have a planned absence, see me in advance to make arrangements. All absences require a written note from your doctor, prospective employer, or school you may be visiting **with their phone number**. Please schedule interviews and your travel on weekends or on Tuesdays and Thursdays, if at all possible. **Each unexcused absence (as noted in the PRS clicker scores) will deduct 2 points from your grade.**

Required Reading

Textbook: Purves, et al.. Neuroscience, 4th Edition, Sinauer Associates, Sunderland, MA.

Companion website: <http://www.sinauer.com/neuroscience4e/> which includes download for Sylvius (neuroanatomy study tool, <http://www.sinauer.com/sylvius4/>). Please use the 4th Edition of the book. You will have to take responsibility for finding what is most important within this large book. Make use of the glossary, index and online materials. All exams will be primarily based on the lectures (and other assignments), and textbook reading is to support concepts discussed in class or in other readings. Some chapters will be skipped entirely or only briefly mentioned.

Additional required reading will be assigned, including several chapters of "The Brain That Changes Itself: Stories of Personal Triumph from the Frontiers of Brain Science" by [Norman Doidge](#), a steal at \$9.36 on Amazon: <http://amzn.com/0143113100>

Special Assignments

As part of the Real World Curriculum, I have de-emphasized the midterm and final, because once you are out of school, you may not ever take an exam again, but you will always have "assignments" to do. There will be several Special Assignments leading to the creation of your own Wikipedia article. This Real-World assignment will be the culmination of you becoming an expert on a neuro topic of your choice. The #1 advice former students gave you about this assignment was, "Don't procrastinate. Get started on it early." Choose a topic you are interested in, because you will really get into it. The Neuroscience Portal <http://en.wikipedia.org/wiki/Portal:Neuroscience> is a good place to start looking for missing pages or stubs. In order to become an expert, you will find and read articles, and interview another expert. There is also an assignment to get a related neuro book, read it, and write a long and useful review on Amazon.

More details about these assignments will be given in class or by emails from me. All emails will be archived on Tsquare.

Grading

Everyone in class can get the grade they wish to get: you will not be graded on a curve, but based on the total number of points you earn.

Midterm Exam	15 points
Final Exam (cumulative)	15 points
Assignments & quizzes	45 points total
Wikipedia article assignment	20 points
Class participation	5 points
Total	100 points

Extra Credit

Throughout the course, I will announce opportunities for you to attend a research seminar or other research presentation, on Tech's campus, at Emory, at Georgia State, or another venue. The Atlanta Chapter of the Society for Neuroscience is a good resource to find out about local talks: ACSFN.org. Feel free to suggest a talk if you hear of one that you think is relevant. Online talks may also be suggested. All talks must be approved by me (Dr. Potter) beforehand and announced to the entire class to be eligible as an extra credit assignment. To receive credit for your attendance at these presentations, you must take notes and use them to write a brief report on the presentation (single page, single-spaced). This will include:

- Your name, the date of the talk, and where it happened,
- an introduction to the speaker (i.e., their name, department, school, title, etc.),
- a description of the major focus of the research (i.e., the research question),
- an explanation of the conclusions, and
- a critique (i.e., whether you believe the conclusions, and why or why not).

Each presentation and report can earn you UP TO 1% of the final course grade. There is no limit to how many lectures you may attend and write up (however, there may be a practical limit based on the number of appropriate talks found and announced in class). This will allow you to make up for not doing well on some test or assignment. You may keep track of how many extra credit points you have earned through the semester by visiting the grade book on Tsquare. All extra credit must be submitted by the end of Wednesday of Finals Week.

Grading overview

A (90+ points) For an A, your work must be *Excellent* and show that you went above and beyond the requirements of the assignments and demonstrated involvement in the discussions.

B (80-89.9 points) = Good work, did what was expected of you well.

C (60-79.9 points) = Adequate work, generally did the minimum to complete the assignments.

D (40-59.9 points) = Deficient work and involvement.

F (less than 40 points) = Failed.

Earn the grade you want by **getting help** in office hours when you need it, and by asking questions.

Policies

1. No question is too dumb to ask, in class or during office hours. Also, bring up points for discussion in addition to questions.
2. Respect and adhere to the Georgia Tech Honor Code. Please visit the honor code site to remind yourself what this entails (www.honor.gatech.edu). No collaboration is allowed on homework assignments, exams, quizzes, or any other assignments, or on the reports for Extra Credit, unless approved beforehand by me. With respect to the Wikipedia assignment, all writing must be your own. Plagiarism, as defined on the honor code site, is not allowed. Again, group efforts must be pre-approved.
3. Using another student's PRS Clicker, even for attendance, is a violation of the Honor Code. Violators will be reported to the Office of Student Integrity for disciplinary action.
4. **Do what it takes to be alert and awake, and ON TIME. Think about this class before you decide to stay up late; go to sleep early enough that you won't be drowsy the next day. Snoozers and late arrivers will be publicly embarrassed. Get some energy drinks and/or a bicycle as needed.**
5. All exams are closed book, no notes (unless it's an on-line quiz on Tsquare).
6. Missed exams and quizzes will result in a zero grade for that item. If you know you will miss an exam, speak with me ahead of time to arrange an alternative.
7. Late assignments will not be accepted. Points will be deducted from assignments and exams for poor English, handwriting that is hard to read, and of course, incorrect answers.
8. Turn off all mobile phones during class time. Computers with quiet keyboards may be used during class for taking notes only (not for surfing the web, checking e-mail, etc). I reserve the right to take points from anyone who uses their cell phone in class, or otherwise disrupts class.