Syllabus -- BIO 306 -- SPRING 2013
Neurobiology

Image from http://philmckinney.com/

Bulletin Course Description: Study of the nervous system and its regulatory role in the body. Underlying physics and chemistry; molecular and cellular principles; development and plasticity; motor control; rhythms and emotions; evolution and diversity. *3 credits*

Instructor:	Dana Merriman	Halsey 249	merrimad@uwosh.edu	424-3076
Class time:	8:00 am	Halsey 260	Mon-Wed-Fri	
Podcasts:	Will post on our D2L site.			
Office Hrs:	Mon 9-10 am	Tue 9:30-10:30 am	Wed 1:50-2:50 pm	
Apptmts:	Sign up on my office door. If nothing there works, email me.			

Textbook: Fox *Human Physiology* 13th ed. $150.00 @ University Books & More. This book will be used in BIO 310 during Spring '13 and in BIO 212 during Spring '13, Summer '13, and Fall '13. If you cannot afford this book, any edition that's 5 years old or less will likely match our content pretty well. The figure numbers won't, but I'll be podcasting. **ADDITIONAL READINGS** will be announced and posted on D2L as they occur.

Readings: Posted in D2L Content.

STUDENTS WITH DISABILITIES ARE WELCOME IN THIS COURSE. There is a form for you to fill out and hand in to me the first week of class posted on D2L Content.

ACADEMIC HONESTY policies are clearly defined at this University and all students are expected to abide by them. Penalties for violations are severe. Cheating on an exam (including looking at someone else's paper) at a minimum results in a zero on that exam, with no opportunity for a make-up or extra credit. A second offense is an F in the course and a report to the Dean of Students.

CAMPUS EMAIL & D2L will be used as official communication to the class. Any class questions emailed to me will be returned with a request to post them on the D2L Discussion board. Please check email and D2L frequently for updates and make sure you email doesn't send "BIO 306" messages to spam. If you need help, see any Help Desk at any Computer Lab on campus (e.g. Halsey 101).

WANT TUTORING? The Center for Academic Resources (CAR, located in Student Success Center Rm 102) provides free, confidential tutoring. To see if there's a tutor for this class yet, visit www.uwosh.edu/car. To request a tutor, call 424-2290.

We may go faster or slower than this schedule shows; it is only an approximation.

- Exam cut-offs are date-based not topic-based.
- Based on the BIO 105 prereq, I have to assume you already understand Ch 2, 3 4, and 5; and parts of 6.

	Week of	Topic list	Helpful chapters	Graded items
1	Jan 28	Welcome, Joe Cell, Triangle of Control	1-6, bits of 11 & 15	
2	Feb 4	Cell types found in nervous systems	7	
3	Feb 11	Excitable cell physiology	6, 7	Mon Feb 11 **Quiz** (5%) Covers thru Wed Feb 6
4	Feb 18	Excitable cell physiology; intro to synapses	7	
5	Feb 25	Energetic costs & supply	5, a bit of 19	
6	Mar 4	Synaptic physiology; intro to pharmacology	7	Mon Mar 4 **Exam 1** (20%) Covers thru Wed Feb 27
7	Mar 11	Development & plasticity	Bits of 7 & 8	
	Mar 18	**NO CLASS, SPRING BREAK**		
8	Mar 25	Wiring diagrams for beginners	8, 12	
9	Apr 1	Basic gross anatomy of nervous systems	8	Fri Apr 5 **Exam 2** (30%) Covers thru Mon Apr 1
10	Apr 8	Autonomic nervous system	8, 9	
11	Apr 15	Sensory systems	10	
12	Apr 22	Sensory systems	10	Fri Apr 26 Essay topic email due
13	Apr 29	Evolution & diversity		Fri May 3 **Essay** (10%)
14	May 6	Mon = Review/Q&A Fri May 10 = makeups		Wed May 8 **Exam 3** (35%) Covers thru Wed May 1

LEARNING OBJECTIVES. Building on the knowledge base of the BIO 105 prerequisite, students coming out of this course will be able to**:**

- Use the “Joe Cell” model to think creatively about cellular functions
- Identify & describe the 3 systems that control body function and behavior & how they interact
- Identify & describe the several important cell types that compose the nervous system
- Explain the special features that make some cells “excitable” & incur extra metabolic costs thereby
- Explain how synapses operate & are impacted by pharmacological agents
- Deconstruct simple excitatory & inhibitory neuronal wiring diagrams
- Describe the basic principles of selected sensory systems
- Describe the basic principles of mammalian motor control
- Appreciate the diversity of nervous systems produced by evolution

CLASSROOM POLICIES:

- Please silence all electronic devices on entrance to the classroom.
- Please address me as "Dr. Merriman". *If you know me from before as "Dr. Vaughan", that is okay, too!*
- Feel free to raise your hand to ask questions in lecture at ANY time. *I enjoy classroom give-and-take!*
- 8:00 am classes present a challenge to a sleep-deprived person, especially those of the "owl" persuasion. I was born a "lark" but the older I get, the more "owlish" I am; so I have some first-hand advice. If at all possible, get your rest each night, eat a good breakfast, and get a little brisk exercise before class.
- If you are struggling with a concept (or two) in class, get my assistance early. Right before (or worse, right after) an exam may be too late to cement proper thinking in time for it to show.
- Old exams will be posted on D2L to help you study. Answer keys will NOT be posted because they only help you memorize, and that isn't the point of a college course. Questions this semester may be the same as, or different from, old exams.

EVALUATION POLICIES ("GRADING")

"C" = average.
"A" = outstanding.
Evaluation instruments are written in order to "stretch" the class sufficiently to discern average from outstanding performance. Effort cannot be assessed, so it cannot enter into evaluation.

D2L Gradebook: Grades will post on the D2L Gradebook which will be set up to display your grade thus far in the course.

Quiz: a single quiz (30 minutes) will be given at the start of the 3rd week to give you an idea of how you are doing in the class, ahead of the drop date and for Early Alert purposes. It will be worth 10% of your course grade.

Exams 1-2-3: 60 minutes, table above gives exam dates, coverage, and weight value toward the final grade. All exams are cumulative from the first day of class. **I never give exams early.** See missed exam policy below.

Missed Quiz or Exam: If you miss a quiz or exam, I will notice it when I inventory submitted papers on return to my office after class. "WHY" you missed is your business, not mine. All missed work is made up on Fri May 10 in our regular 60 minute time slot. Note that if you miss more than one exam, no extra time will be given on Fri May 10 just because you are taking more than one makeup. Sometimes circumstances warrant an Incomplete grade. To understand your legal obligations regarding any Incomplete grade, see http://www.uwosh.edu/registrar/bulletins/bulletin/2011-2013/policies/academic_pol.php#grade_policies (scroll down to section C.5.2.).

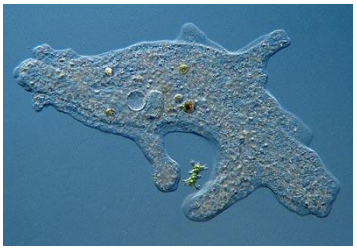
Exam Questions can come from lecture and/or assigned reading that is specifically identified as "fair game for the exam". Question type will vary but, in the realm of neuroscience, you may expect graphs, equations, short answer, thought questions, and multiple choice "all that apply" (meaning that one, some, none, or all answer choices may be correct).

Exam Curves: Exams are written to "stretch" the class. I reserve the right to curve exams, for example to ensure no worse than a "C" average. I will clearly inform the class of any curve in a message I will leave on the D2L Gradebook.

Essay: On Fri May 3, you will handwrite a short original essay about one of the "Neuro in the News" articles that I will post during Spring Break (giving you 6 weeks to prepare). This essay will be worth 10% of your grade. For the essay, I will provide you blank lined paper to write on and a clean copy of the "Neuro in the News" article that you've chosen. All you need is a writing utensil. Here are further instructions:

- Your essay's goal is to teach the new finding of your "News" article to an imaginary classmate. S/he has the same vocabulary and basic knowledge that you have. "Set up" your reader with basic

background first in a way that showcases what you learned in our class, and THEN "teach" the new finding.



- Your "News" article will be a recent idea on the edge of what is already known about neurobiology. All new findings in science are like a newly-formed pseudopod on an amoeba; the body of the amoeba is still there, as a basis. The pseudopod may become a permanent part of the body, or it may be retracted later. Knowledge advances incrementally, and we rarely attribute "fact" status to a finding until a lot of time has gone by.

- No later than Fri Apr 26, you must tell me in an email which "News" article you have chosen from the posted list. Doing so lets me make you a copy to use on May 3. No email, no copy.

- I want you to "show off" your learning from our semester together. Use the vocabulary and concepts you've been taught.

- You may not plagiarize, paraphrase, quote, or otherwise copy text from your "News" article or any other material. This essay is to be in your own words.

- Don't just follow the order in which the article gives information (that would come dangerously close to paraphrasing). Weave the new finding into a cohesive essay relating it to class material.

In evaluating your essay, I'll be looking for:

- Obedience to the above instructions.
- Adequate handwriting; if I can't read it, it's wrong.
- Clarity of expression; if your sentence makes no sense, it's wrong.
- Accurate & appropriate use of course-taught basic concepts and vocabulary in building the basis.
- For an A: at least one (1) clearly-articulated Value-Added Insight, probably from some outside research you've done. You may not bring this VAI material to the exam.
- For an A+: at least three (3) clearly-articulated Value-Added Insights.

Essay Preparation: I encourage you to practice writing your "News" essay well ahead of time and then to share a fairly polished draft with someone in the class, or at the Writing Center. Since I don't have time to pre-read *everyone's* essay, I will be unable to pre-read *anyone's* essay.

Final Course Grades: Cut-offs are firm. Just because you are within 0.05 percentage point of the next higher grade is not sufficient reason for me to move you up.

Letter	Percentage	Gradepoints
A	92.0-100	4.00
A-	90.0-91.9	3.67
B+	88.0-89.9	3.33
B	82.0-87.9	3.00
B-	80.0-81.9	2.67
C+	78.0-79.9	2.33
C	72.0-77.9	2.00
C-	70.0-71.9	1.67
D+	68.0-69.9	1.33
D	62.0-67.9	1.00
D-	60.0-61.9	0.67
F (Failure)	<60.0	0.00