

Introductory Neuroscience

BIOL 4752 and BMED 4752

Fall 2006

Tuesday/Thursday 9:35-10:55; 1103 Whitaker Building

Online course material: webct.gatech.edu; username: <PRISM ID>, password: <GT account password>

Instructors

Steve Potter, Ph.D.: steve.potter@bme.gatech.edu; office hrs Fridays 9:30-10:30, UAW 3110, others by appt.

Nael McCarty, Ph.D.: nael.mccarty@biology.gatech.edu; office hrs 4-5 Mondays and 2-3 Thursdays, CE 223, others by appt.

TAs: Natasha Lucki <nlucki@hotmail.com>. Office hours 9:30 - 10:30 on Mondays, room 307 Cherry Emerson.

Leonard Chu: gtg433v@mail.gatech.edu; office hrs Thurs 11:00-12:00, IBB atrium, others by appt.

There will also be special Invited Experts as listed in the schedule. Attendance and active participation are required.

Learning Objectives

1. Understand the building blocks of the nervous system and how they functionally interact
2. Appreciate the complexity of higher order brain functions and begin to understand the pathways involved
3. Synthesize new connections, ideas and approaches about neuroscience research drawing from examples given in lecture, handouts and the textbook
4. Independently obtain and report, in written and oral form, topical neuroscience information.

Grading

Final grades will be based on the following:	
Exams (2)	40%
Final Exam (cumulative)	25%
Homework & pop quizzes (~8)	20%
Term paper	10%
Class attendance/participation	5%

Required Text

Purves, *et al.*. Neuroscience, 3rd Edition, Sinauer Associates, Sunderland, MA. with Sylvius CD

Additional reading as assigned.

Term Paper

This will be 5 pages of single-spaced text, not counting figures or references. The topic will be a neuro-related disease or disorder of your choosing, and what the latest research says about it. Due in class, Nov. 28 (or before).

Extra Credit

There will be extra credit problems or assignments that will involve going above and beyond what is expected for an introductory course. It will be possible to get an A without doing these, but your required work will have to be "Excellent". One such assignment is to attend the Society for Neuroscience meeting downtown ATL, Nov. 14-18 (registration and expenses reimbursement may be available!) See sfn.org.

Policies

1. The Georgia Tech Honor Code must be adhered to at all times; please visit the honor code site to remind yourself what this entails (www.honor.gatech.edu). No collaboration is allowed on homework assignments, exams, term papers, or any other assignments. With respect to the term paper, all writing must be your own; plagiarism, as defined on the honor code site, is not allowed.
2. All exams are closed book, no notes. We prefer you to be thinking, rather than flipping through your notes during the tests.
3. Missed exams will result in a 0. The only exceptions are a *documented* excuse with confirmation through the Dean of Students. A make-up will be given in these cases.
4. Homework assignments will be posted on WebCT one week prior to due date. Late homework will not be accepted. Points will be deducted for loose pages, missing units, and incorrect answers.
5. Turn off all cell phones during class time. Computers may be used during class for taking notes, but not for surfing the web, checking e-mail, *etc.*

Introductory Neuroscience: BMED 4752 (88593), Fall 2006 1103 Whitaker Instructors: Steve Potter, Nael McCarty

WEEK	DAY	DATE	TOPIC	INSTRUCTOR	ASSIGNMENT	
1	Tue	22-Aug-06	Intro	Potter	Ch. 1	
	Th	24-Aug-06	Intro, anatomy	McCarty	Ch. 1	Potter talk at Emory
2	Tue	29-Aug-06	Development and Wiring	Potter	Ch. 21, 22	
	Th	31-Aug-06	Membranes	McCarty	Ch. 2, 3; HW1 due	Potter at EMBS conf.*
3	Tue	5-Sep-06	Neural Signaling	McCarty	Ch. 3, 4	
	Th	7-Sep-06	Synaptic Transmission	McCarty	Ch. 5	
4	Tue	12-Sep-06	Neurotransmitters / Signalling	McCarty	Ch. 6, 7	
	Th	14-Sep-06	Midterm Exam			
5	Tue	19-Sep-06	Somatic Sensory System	Potter	Ch. 8	
	Th	21-Sep-06	Journal Club	Potter		McCarty gone
6	Tue	26-Sep-06	Vision	McCarty	Ch. 10, 11	
	Th	28-Sep-06	Chemical Senses	McCarty	Ch. 14	
7	Tue	3-Oct-06	Pain	Hochman	Ch. 9	
	Th	5-Oct-06	Sensorimotor Integration	Ting	Ch. 15, 16	
8	Tue	10-Oct-06	Motor Neurons and Circuits	Lee	Ch. 15, 16	
	Th	12-Oct-06	Motor System Control	Nichols	Ch. 19	Neuroscience Conf.*
9	Tue	17-Oct-06	Fall Recess	Holiday!		Neuroscience Conf.*
	Th	19-Oct-06	SFN Meeting Discussion	Students		
10	Tue	24-Oct-06	Synaptic Plasticity	McCarty	Ch. 23	
	Th	26-Oct-06	Activity-mediated Plasticity	McCarty	Ch. 24	
11	Tue	31-Oct-06	Midterm Exam			
	Th	2-Nov-06	Association Cortices	Potter	Ch. 25	McCarty gone
12	Tue	7-Nov-06	How We Remember; Why We Forget and Everything in Between	Zola	Ch. 30	McCarty gone
	Th	9-Nov-06	Language and Speech	Ting	Ch. 26	McCarty gone, Potter
13	Tue	14-Nov-06	Drug Abuse	Howell		
	Th	16-Nov-06	Functional Brain Imaging	Potter		
14	Tue	21-Nov-06	Consciousness	Potter	Handout	
	Th	23-Nov-06	Thanksgiving Holiday	Holiday!		
15	Tue	28-Nov-06	Auditory & Vestibular	Potter	Ch. 12,13; Term Paper due!	
	Th	30-Nov-06	Emotions	Potter	Ch. 28	
16	Tue	5-Dec-06	NeuroEthics	Potter/Lennard (?)	Handout	Dead week
	Th	7-Dec-06	Sleep+Dreams	Potter	Ch. 27	Dead week
FINALS		Th	14-Dec-06	Final Exam 8:00 AM - 10:50	-	cumulative

From calendar: TTH 9:00 & 9:30

Period 10

Dec 14th (Thu)

8:00 - 10:50

* <http://embc2006.njit.edu/>

* <http://web.sfn.org/>