

CELLULAR NEUROBIOLOGY
BIPN 140
2016
SYLLABUS

Professors: Nicholas C. Spitzer and Chih-Ying Su
Location: Warren Lecture Hall 2001; Tu & Th 2:00 – 3:20 pm.
Text: *Neuroscience*, Purves et al. (5th edition, Sinauer Associates Publishers)

DATE	LECTURE TOPIC	LECTURER	READING
Sept. 22	1 Neurons and Glia	Spitzer	Chap. 1
27	2 Electrical Signaling	Spitzer	Chap. 2
29	3 Ion Channels and Currents	Spitzer	Chap. 2 & 3
Oct. 4	4 Combinations of Currents I	Spitzer	Chap. 3
6	5 Combinations of Currents II	Spitzer	Chap. 3 & 4
11	6 Channel Structure & Function	Spitzer	Chap. 4
13	7 Synaptic Transmission I	Su	Chap. 5
18	1st MIDTERM EXAM		
20	8 Synaptic Transmission II	Su	Chap. 5 & 6
25	9 Neurotransmitters/Receptors	Su	Chap. 6
27	10 Intracellular Signaling	Su	Chap. 7
Nov. 1	11 Synaptic Plasticity I	Su	Chap. 7 & 8
3	12 Synaptic Plasticity II	Su	Chap. 8
8	13 Synapse Formation	Su	Chap. 23: 521-535
10	14 Learning & Memory	Su	Ch 24: 537-543; Ch 31: 695-708
15	2nd MIDTERM EXAM		
17	15 The Chemical Senses	Su	Chap. 15
22	16 Early Brain Development	Spitzer	Chap. 22
24	--Thanksgiving--(Holiday)		
29	17 Axon Guidance & Target Selection	Spitzer	Chap. 23
Dec. 1	18 Plasticity & Circuit Dynamics	Spitzer	Chap. 24
7	FINAL EXAM 3:00-6:00 pm Monday of exam week		

Problem Sets: Problem sets will be distributed almost every week from the class website. They will cover the previous week's material. They are for practice only: they will not be graded, but you may be called upon in section to answer them. Answers will be available on the class website the week after they are handed out.

Sections: Start the week of September 26th.

Biology 140
Fall, 2016

Grading:

1st Midterm	25%
2nd Midterm	25%
Final Exam	50%

Grading is on a curve.

Texts: **Required**
Neuroscience, Purves et al. (5th edition, Sinauer Associates Publishers)

Supplemental
The Neuron, Levitan and Kaczmarek
The Physiology of Excitable Cells (3rd edition), Aidley
Fundamental Neuroscience, Squire et al.
Principles of Neural Science, Kandel and Schwartz
Nerve, Muscle and Synapse, Katz
Neurobiology, Shepherd
Ionic Channels of Excitable Membranes, Hille
From Neuron to Brain, Nicholls, Martin and Wallace (3rd edition)

Class website: <http://classes.biology.ucsd.edu/bipn140.FA16/>

Instructional Assistants: Stephanie Bohaczuk, Peixi Chen, Antonia Schonwald, Susie Wang & Milad Torabi.
IA Office Hours: Will appear on the class website

GENERAL INFORMATION

INSTRUCTORS: Chih-Ying Su, 4402 Bonner Hall, c8su@ucsd.edu, 822-1128; Nick Spitzer, 3222A Pacific Hall, nspitzer@ucsd.edu, 534-3896.

HANDOUTS: There are no handouts. Problem Sets will be available from the class website. Lecture outlines and overheads/ppts will usually be available on the class website as well. Exam questions from previous years will also be available on the website.

PROBLEM SETS: These consist of sets of questions that will help you evaluate your understanding of the material covered in the lectures and the reading. They are very similar to questions you will have to answer on exams. To get the most out of them, treat them like exams. **In the past there has been an excellent correlation between those who worked through the problem sets and those who received high grades in the course.** They will not be graded, but will be discussed in section. The answers will be available on the class website after the week in which they are discussed.

RECITATION SECTIONS: Sections will meet starting the second week of the quarter (the week starting September 26th); there will be no section meetings during the short first week. The sections are useful opportunities to go over material that has been presented in the lectures and in the reading. They are also valuable because the problem sets and their solutions will be discussed.

OFFICE HOURS: Chih-Ying Su (4146 Bonner Hall): Mon, 1-2 pm & Nick Spitzer (3222A Pacific Hall): Wed, 12-1 pm. IA office hours will appear on the class website.

EXAMS: The grade in the course depends on two midterm exams and a comprehensive final exam. The midterms are each worth 100 points and the final is worth 200 points. Midterm exams will consist of short essays and problems. The final exam will consist of the equivalent of an hour exam on the new material since the 2nd midterm, and a comprehensive exam that covers the whole course.

The exams will cover material from lectures, assigned reading, and problem sets. The lectures are important since they highlight matters of particular significance and discuss issues that may be complex. The text is important since this reading provides further background and the instructor does not cover all of the material in lecture. The problem sets are important since they provide excellent practice in working out exam questions and some of the questions on the exams will be drawn from the problem sets. Background reading sources are provided for your further edification only; there will be no test questions drawn from this material.