Intro to Neural Science
NEURL-UA 100 (001) – Neural Science
BIOL-UA 100 (001) - Biology
Prof. Paul Glimcher
4 Washington Place, 809

Lectures
Monday and Wednesday 2:00pm-3:15pm
Meyer 122

Recitations:
002: Monday  4:55pm-6:10pm     WAV 366     Bas van Opheusden
003: Tuesday  4:55pm-6:10pm     Silver 206     Bas van Opheusden
004: Wednesday  4:55pm-6:10pm  Meyer 102     Mel Win Khaw
005: Thursday  4:55pm-6:10pm     WAV 369     Alex Berardino
006: Friday   11:00am-12:15pm  Tisch LC4     Alex Berardino

Graduate Teaching Assistants

Mel Win Khaw (head TA)
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Sebastiaan “Bas” van Opheusden
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Texts

Required:
Neuroscience: Exploring the Brain. Bear, Connors and Paradiso.
(Third edition)

Recommended as a background text for those who find the main text too intense:

Recommended as advanced reading for those who find the main text not intense enough:
Grading

Exams:
Midterm I 25%
Midterm II 25%
Final Exam 50%

Date and Time of Final:
Monday, December 17th from 2PM-3:50PM.
122 Meyer

Course Syllabus

PART 1: Cellular and Molecular Foundations of Neuroscience

Week 1
Sept 3: Historical Foundations of Neuroscience
Readings: Chapter 1

No Recitations This Week: First Week of Classes

Week 2
Sept 8: The Cells of the Nervous System, Introduction to Potentials
Readings: Chapter 2
In Class Exercise: Flash Cards

Sept 10: The Resting Potential, Introduction to the Action Potential
Readings: Chapter 3
In Class Exercise: Question Sheet

Recitation Goal: Understanding the Resting Potential

Week 3
Readings: Chapter 4
In Class Exercise: Conduction Velocity

Sept 17: The Action Potential II
Readings: Chapter 5


Week 4
Sept 22: Basics of Synaptic Transmission
Readings: Chapter 5

Sept 24: Neurotransmitters and Drugs
Readings: Chapter 6

Recitation Goal: **Review for Midterm I**

**Exam Covers Sept 3 – Sept 25 Lectures and Readings**
Note: You are free to attend any recitations you want this week.
IF YOU ARE OBSERVING ROSH HASHANAH AND ARE IN
THE THURSDAY OR FRIDAY RESITATION, PLEASE ATTEND
ONE OF THE OTHER RECITATIONS THIS WEEK

Week 5
Sept 29: Midterm I

Oct 1: Neuroanatomy
Readings: Chapter 7

Recitation: **Sheep Brain Dissection, wear ‘workclothes’**

**PART 2: Sensory and Motor Neuroscience**

Week 6
Readings: Chapter 8
Additional Reading: “The Molecular Logic of Smell” and “Making Sense of Taste”
Scientific American Articles from Website

Oct 8: Vision 1, The Eye
Readings: Chapter 9
In Class Exercise: The Blindspot

Recitation Goal: Understanding the basics of sensory coding: Transduction, Encoding, Pathways,
Topographic Maps and Receptive Fields

Week 7
Oct 13: NYU Recess, No Class

Oct 15: Vision 2, Low Level Cortex
Readings: Chapter 10

No Recitations This Week
Week 8
Oct 20: Vision 3, High Level Cortex and Perceptual Experience
Readings: “Vision A Window On Consciousness” Sci Am Article from Website

Oct 22: The Auditory System
Readings: Chapter 11 up to page 375
Additional Reading: “Listening With Two Ears” Sci Am Article from Website
In Class Exercise: Frequency Limits

Recitation Goal: Understanding the Visual System

Week 9
Oct 27: The Touch System
Readings: Chapter 12
In Class Exercise: Discrimination Thresholds

Oct 29: Movement 1
Readings: Chapter 13

Recitation Goal: Understanding All General Principles of Sensory Systems

Week 10
Nov 3: Movement 2
Readings: Chapter 14

Nov 5: Drugs and the Autonomic Nervous System
Readings: Chapter 15

Recitation Goal: Review for Midterm II
Exam Covers Oct 1 – Nov 5 Lectures and Readings
Note: You are free to attend any recitations you want this week.

Week 11
Nov 10: Midterm II
Midterm II, covers Part 2 of Class only. Oct 1 – Nov 5 Lectures and Readings.

Part 3: Cognitive Neuroscience
Nov 13: Development in the Nervous System
Readings: Chapter 23

Recitation Goal: Understanding Development

Week 12
Nov 17: LECTURE CANCELED – NO LECTURE THIS DAY
Nov 19: Learning and Memory: Structure and Anatomy
Readings: Chapter 24

Recitations Wednesday, Thursday and Friday ONLY
Goal: Learning and Memory

Week 13
Nov 24: Learning and Memory: Molecular Biology
Readings: Chapter 25

Nov 26: Emotion I
Readings: Chapter 18

Recitations Monday and Tuesday ONLY
Goal: Learning and Memory

Thursday and Friday are Thanksgiving Break

Week 14
Dec 1: Emotion II
Readings: No Readings

Dec 3: Neurobiology of Language
Readings: Geshwind Article on Website

Recitation Goal: Understanding Emotion and LTP

Week 15
Dec 8: Neurobiology of Decision
Readings: ‘Tahoe 5’ Article on website

Dec 10: The Neurobiology of Love
Readings: No Readings
In Class Exercise: To Be Determined…

Recitation Goal: Review for Final Exam – Final is Cumulative but stresses CogNeuro

Dec 15: Final Exam