

NGG 573: Neuroscience Core III 2019

Course Directors: Maria Geffen, Yale Cohen and Chris Pierce

Time: MWF, 10:00am-12:00pm

Location: 140 John Morgan Building (Barchi Neuroscience Library); labs meet in 210 Stemmler

Text : *The Human Brain* (John Nolte [N]; any version) and *Principles of Neural Science* (Kandel & Schwartz [K&S]; 5th Edition). If you do not want to purchase these texts, copies of Kandel are on reserve in the Biomedical Library. Nolte is available through Penn Library's subscription to ClinicalKey; see also the course Canvas website for the link. Additional readings are found in the "2019 Readings" folder on the course's Canvas website.

Goals of Core III

(1) Learn the basic structural features of the vertebrate brain at the macroscopic scale (gross = major subdivisions, major connecting tracts).

(2) Learn to find your way around the brain using the various available maps (atlases) at the corresponding levels of scale: This gets easy as you accomplish goal #1.

(3) Have an understanding and appreciation of our current understanding of systems and integrative neuroscience.

Grading: Take-home Exams (80% total), in-class practical (15%), and class participation (5%).

Tests will be distributed electronically via Canvas and will be returned electronically to the designated folder on Canvas. Tests will be given after the completion of certain units and will need to be returned within **72 hours**. We will discuss this more in class. Text in **bold red** below highlight those days when a test will be distributed. These tests may include lectures from one or more topics and one or more lectures.

Day	Date	Topic	Lecturer
W	Jan 16	Course overview and anatomy lab 1	Geffen/Cohen
F	Jan 18	Meninges/vasculature and lab 2	Cohen
M	Jan 21	MLK; no class	MLK; no class
W	Jan 23	Brain imaging	Detre
F	Jan 25	Brainstem; N11	Gottfried
M	Jan 28	Basics: development; K&S 52-56	Raper
W	Jan 30	Basics: development ; K&S 52-56	Raper
F	Feb 1	Lab 3	Cohen
M	Feb 4	Basics: theory	Geffen
W	Feb 6	Basics: theory	Geffen
F	Feb 8	Vision 1; K&S 25-29	Contreras
M	Feb 11	Vision 2; K&S 25-29	Balasubramanian
W	Feb 13	Vision 3 ; K&S 25-29	Epstein
F	Feb 15	Auditory system 1; K&S 30-31	Eliades
M	Feb 18	Auditory system 2 ; K&S 30-31	Geffen

W	Feb 20	Olfactory system; N18; K&S 25-29	Mainland
F	Feb 22	Taste; N18; K&S 25-29	Mainland
M	Feb 25	Spinal cord	Cohen
W	Feb 27	Somatosensory system; K&S 22-23	Luo
F	Mar 1	No class	
M	Mar 4	Spring Break	
W	Mar 6	Spring Break	
F	Mar 8	Spring Break	
M	Mar 11	Cerebellum; K&S42	Tooley
W	Mar 13	Movements; K&S33-38 (skip 36)	Cohen
F	Mar 15	Eye movements; K&S39-40	Gold
M	Mar 18	Overview/introduction	Pierce
W	Mar 20	Accumbens and addiction	Schmidt
F	Mar 22	Metabolism	Hayes
M	Mar 25	Fear and amygdala	Thomas
W	Mar 27	Hippocampus and plasticity	A Cohen
F	Mar 29	PFC	Kable
M	Apr 1	Circadian rhythms	Raizen
W	Apr 3	Sleep	Weber
F	Apr 5	Basal Ganglia 1; N19	Cohen
M	Apr 8	Basal Ganglia 2; K&S 43	Ding
W	Apr 10	Basal Ganglia 3; K&S 43	Fuccillo
F	Apr 12	BMI	Litt
M	Apr 15	Pathology	Lee
W	Apr 17	TMS	Hamilton
F	Apr 19	DBS	Lucas
M	Apr 22	Brain Dissection	Lee and Cohen
W	Apr 24	Brain Dissection	Lee and Cohen
F	Apr 26	In Class Practice Practical	Cohen/Geffen
M	Apr 29	Practical; Class over	Cohen/Geffen