

Anatomical Foundations of Neuroscience **(Anatomy & Cell Biology 9535b)**

This is a half-course to help graduate students appreciate the relevance of anatomical knowledge to research in Neuroscience.

Classes are on Tuesdays (10:30-11:30 am) and Thursdays (10:30-12:30 am) in **SDRI Room 218**. **Dates and place revised 20 Jan 2009.**

Timetable and list of topics for the course. Second Term, January-April 2009

Date	Topic
1 Tue 13 Jan	Overview of the anatomy of nervous systems of invertebrate animals (up to and including non-vertebrate chordates).
2 Thu 15 Jan	Early development of the vertebrate nervous system. (Formation of neural tube and neural crest. Major divisions of brain; neuroomeres. Alar and basal laminae. Abnormal neural tube development.)
3 Tue 20 Jan	Later development of the vertebrate (mammalian) nervous system. (CNS: Secondary divisions of brain; flexures; production and migration of neurons; caudal cell mass; formation of the cerebellum; gliogenesis. PNS: Migration and differentiation of neural crest cells.)
4 Thu 22 Jan	Development of special sense organs (Olfactory & vomeronasal epithelia; eye; ear; taste buds; other derivatives of placodes.)
5 Tue 27 Jan	Major parts of the adult CNS in various groups of vertebrate animals.
6 Thu 29 Jan	Organization of the PNS: (Types of ganglia. Somatic and visceral innervation. Separation of function in nerve roots in different groups of vertebrates.)
7 Tue 3 Feb	Gross anatomy of the spinal cord and brain stem (various animals).
8 Thu 5 Feb	The cranial nerves and their functions (1).
9 Tue 10 Feb	

The cranial nerves and their functions (2).

- 10** Thu 12 Feb
FIRST MID-COURSE TEST (20%) [Written]
- 17 Feb - 13 Mar. Laboratory work (12 hours), with both human and rat material and/or pictures.**
- 11** Tue 17 Feb
Sectional anatomy of the spinal cord.
- 12** Thu 19 Feb
Sectional anatomy of the medulla and pons.
- 13** Tue 24 Feb
Sectional anatomy of the midbrain.
- 14** Thu 26 Feb
Anatomy of the cerebellum (Lecture and lab).
- 15** Tue 3 Mar
Sectional anatomy of the diencephalon.
- 16** Thu 5 Mar
Descriptive anatomy of the human cerebral cortex; equivalent areas in the rat (Lecture and lab).
- 17** Tue 10 Mar
Internal structure of the telencephalon.
- 18** Thu 12 Mar
Cortical layers and functional areas (mainly human).
- 19** Tue 17 Mar
Central connections of sensation: 1. Somatosensory pathways.
- 20** Thu 19 Mar
Central connections of sensation: 2. Vestibular and auditory pathways.
- 21** Tue 24 Mar
Extraocular muscles and cranial nerves III, IV and VI
- 22** Thu 26 Mar
SECOND MID-COURSE TEST (30%) [Mostly practical]
- 23** Tue 31 Mar
Central connections of sensation: 3. Visual pathways and visual reflexes. (Will not include details of retina or organization of higher visual cortical areas.)
- 24** Thu 2 Apr

Descending pathways controlling skeletal musculature: Vestibulospinal, tectospinal, reticulospinal, rubrospinal and corticospinal projections.

- 25 Tue 7 Apr
Anatomy, connections and functions of the cerebellum and basal ganglia.
- 26 Thu 9 Apr TBA
- 27 Tue 14 Apr
Central connections of sensation: 4. Chemical senses. (Olfactory system and taste; receptors and pathways.)
- 28 Thu 16 Apr
The hypothalamus and neuroendocrinology.
- 29 Tue 21 Apr
Development and comparative anatomy of the hippocampal formation, entorhinal cortex, fornix, septal area and related parts of the forebrain. Neuroanatomy of memory.
- 30 Thu 23 Apr
FINAL EXAM (a) Written (35%)
- 31 Thu 30 Apr
FINAL EXAM (b) Oral/practical (15%)
-

Instructor: J. A. Kiernan

Department of Anatomy & Cell Biology
Rm 453, Medical Sciences Building, UWO
Phone: 661 2111 ext 86822
Email: kiernan[AT]uwo.ca

Web page with course notes for Anatomy 9535b:

<http://instruct.uwo.ca/anatomy/530/anfound.htm>