Spring 1-2003

PT 536.01: Neuroscience

Charles T. Leonard
Univeristy of Montana - Missoula

PT 536 NEUROSCIENCE
Spring Semester 2003, 5 credits

Instructor:
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Class hours: 10:10-12:00 Tue., Wed. and Fri. in SB 113 (Lab in SB 020 and 050 as needed)

Required Textbooks:
1. Nolte, The Human Brain, An Introduction to Its Functional Anatomy, 5th edition, Mosby, 2002.
2. Leonard, The Neuroscience of Human Movement, Mosby, 1998.

Additional References:
Faculty Packet
Lab Materials
Handouts
Other recommended reading

Evaluation of Student Performance:
Classroom attendance is voluntary. Students are responsible for all material covered in lectures and laboratory/study group activities. Assigned textbook readings are meant to assist the student in their comprehension of course material. The student's grade will be based on four examinations. The first and third examinations (50 points each) will be one hour long and include only written portions. The second (midterm) and fourth (final) examinations (100 points each) will be two hours long and include written and photographic slide practical sections. The midterm and final examinations will be comprehensive, covering all the material presented in the course to that point. Course grades will be determined as follows: A = 90-100%, B = 80-89%, C =70-79%. Attainment of a test score of less than 70% will require the student to retake the examination. If the student does not obtain a 70% or greater on the retake examination, they will fail the entire course and have to retake the course the next time it is offered.

Laboratory Activities: Students will need to provide their own examination gloves and white lab coat for participation in activities using cadaver material.

Course Schedule:

1/28 Tue.

10:10 Introduction; Nolte 1-36, Leonard 1-20

11:10 Superficial features of the brain; Nolte 53-66

1/29 Wed.

10:10 Lab:

11:10 Lab continued

1/31 Fri.

10:10 Nervous system development; Nolte 37-52, Leonard 124-128
Disorders of neuroembryonic development

2/4 Tue.

10:10 Blood supply of the brain and spinal cord; Nolte 119-146, 255-257

11:10 Review meningeal coverings, ventricles and CSF, meningitis/encephalitis; Nolte 79-97, 98-117.

2/5 Wed.

10:10 Lab: Meninges, ventricles and arteries

11:10 Lab continued

2/7 Fri.

10:10 Histology and organization of cerebral cortex; Leonard 102-133

11:00 Neural response to damage

2/11 Tue.

10:10 Cerebral vascular disease

11:10 Support cells

2/12 Wed

10:10 Anatomy of the spinal cord; Nolte Chapter 10

11:10

2/14 Fri.

10:10 Neurophysiology

11:10 Neurotransmission, Multiple sclerosis, Guillain Barre Syndrome;

2/18 Tue.

10:10 Receptor physiology and Neuromuscular pathology

11:10 GTO and muscle spindles; Nolte 210-214, Leonard 20-30

2/19 Wed.

10:10 Lab: Sensory systems; Nolte Chapter 9

11:10 Lab continued

2/21 Fri.

10:10 Sensory systems continued (pathways)

11:10 Review

2/25 Tue.

10:10 **Examination 1**

2/26 Wed.
10:10 Lab: Neurological evaluation – reflex testing
11:10 Lab continued
2/28 Fri
10:10 Spinal cord clinical questions
3/4 Tue
10:10 Autonomic nervous system
11:10 Limbic system
3/5 Wed
10:10 Study groups – peripheral and spinal cord lesions
11:10 Study groups continued
3/7 Fri
10:10 Brainstem
3/11Tue
10:10 Brainstem
3/12 Wed
10:10 Cranial nerves
3/14 Fri
10:10 Cranial nerves
3/18 Tue
10:10 Review
3/19 Wed
10:10 **Midterm**
3/21 Fri
No Class (Reading day)

3/22-31/02 Spring Break

4/1 Tue
10:10 Visual pathways
11:10 Visual deficits; Nolte 511-524
4/2 Wed
10:10 Lab: Neurological evaluation – cranial nerve testing
11:10 Lab continued
4/4 Fri
10:10 Vestibular system
4/8 Tue
10:10 Vestibular deficits and testing
4/9 Wed
10:10 Basal ganglia
11:10 Parkinson, dystonia, Huntington diseases, pharmacology
4/11 Fri
10:10 Videotape: Common movement disorders
11:10 Videotape continued

4/15 Tue
10:10 Cerebellar anatomy; Nolte 486-509, Leonard 49-58
11:10 Cerebellar function
4/16 Wed
10:10 Cerebellum
11:10
4/18 Fri
10:10 Cerebellar dysfunction
11:10 Diencephalon; Nolte 386-409, Leonard 59-63

4/22 Tue
10:10 **Examination 3**
11:10 Diencephalon continued
4/23 Wed
10:10 Lab: Neurological evaluation – motor function and functional activities
11:10 Lab continued
4/25 Fri
10:10 Cerebrum; Nolte 525-555, Leonard 63-65
11:10 Cerebrum continued
4/29 Tue
10:10 Role of cerebral cortex in movement; Leonard 102-139
11:10 The neuroscience of motor learning; Leonard 203-226
4/30 Wed
10:10 Lab: Neurological evaluation – Case studies
11:10 Lab continued (Brain scans) Leonard 104-109
5/2 Fri
10:10 Reading day
5/6 Tue
10:10 Motor systems
11:10 Motor systems
5/7 Wed
10:10 Neural control of human locomotion; Leonard 146-175
5/9 Fri
10:10 Review and reading day

Final examination: Finals Week