Syllabus

Vertebrate Physiology     BIOL 416     Fall 2012

Instructor: Jonathan R. Day  Holt 223    X6303  jday@csuchico.edu

Office Hours: MTWRF 5-6 pm

Required Text: Berne & Levy Physiology, 6th edition. eds. BM Koeppen, and BA Stanton.

4 Exams 100% each, average of the 4 exams is the final grade. See an example of the curve below:

93 – 100% A  75 – 79  C+
90 – 92   A-   70 – 74  C
87 – 89  B+   65 – 69  C-
83 – 86  B     55 – 64  D+
80 – 82  B-    50 – 54  D

Reading Assignments: Reading assignments will be given in class/lab

The exams will cover any and all lecture material, laboratory exercises, and reading assignments.

Student learning objectives (SLOs)
  1) Understand the various processes of exchange and transport across the cell membrane.
  2) Understand resting membrane potential and the basis of excitability.
  3) Understand signal transduction.
  4) Understand the functions and organization of the nervous system.
  5) Describe excitation contraction coupling in various muscle types
  6) Understand the role of the microcirculation in regulation of the cardiovascular system.
  7) Understand the principles of gas exchange and perfusion ventilation coupling.
  8) Describe the various homeostatic mechanisms that regulate salt and water balance.
  9) Compare and contrast the regulation of physiological functions by the nervous system and the endocrine system.

Last day to drop without permission: 9/7
Last day to drop without a serious and compelling reason: 9/21
BIOL 416 (students should bring their own laptops to every lab session).

Laboratory Tentative** Schedule Fall 2012: * physiograph labs

Week
1  Online Spectrophometry (student laptops) 8/28
   Spectrophotometry 8/30
2  Osmosis and Diffusion 9/4
   Protein electrophoresis and Western blot I (fresh liver homogenate) 9/6
3  Protein electrophoresis and Western blot II 9/11
   LDH Enzyme Activity (fresh liver homogenate) 9/13
4  Lecture and Review 9/18
   Exam 1 9/20
5  Artificial membranes * 9/25
   Muscle Contraction* (12 frogs) 9/27
6  Neuromuscular Excitation * (12 bull frogs) 10/2
   Muscle Glycogen * (12 frogs) 10/4
7  Heart dissection *(10 fixed hearts) 10/9
   Physiology of Cardiac muscle * (12 bullfrogs) 10/11
8  Lecture and Review 10/16
   Exam 2 10/18
9  ECG and Respiration * 10/23
   TBA 10/25
10 Exercise physiology (BIOL 104 Laptops) 10/30
   Surgical procedures (10 female rats) 11/1
11 Demonstration (2 female rats) 11/6
   Unilateral nephrectomy (20 female rats) 11/8
12 Complete nephrectomy and review 11/13
   Exam 3 11/15
13 Thanksgiving November 19th - 23rd.
14 Pulmonary Lab (BIOL 104 Laptops) 11/27
   Glomerular filtration (10 necturus) 11/29
15 TBA 12/4 & 12/6
16 Lecture and review 12/11 & 12/13

Exam 4 10:00 to 1150am, Dec 18th