

## Syllabus

Vertebrate Physiology

BIOL 416

Fall 2009

Jonathan R. Day

Holt 223

X6303

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Office Hours: M 3-5p; W 2-5p

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

4 Exams 100% each, average of the 4 exams is the final grade.

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/or 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: September 4<sup>th</sup>.**

**Last day to drop without a serious and compelling reason: September 18<sup>th</sup>.**

Tentative Schedule:

- Week 1      Lecture (8/25)  
                 Osmosis and Diffusion (8/27)
- 2              Spectrophotometry (9/1)  
                 Protein electrophoresis and Western blot I (9/3)
- 3              Protein electrophoresis and Western blot II (9/8) **Campus Furlough Day**  
                 LDH Enzyme Activity (9/10)
- 4              Artificial membranes (9/15)  
                 Lecture and Review (9/17)
- 5              **Exam 1 (9/22)**  
                 Muscle Contraction (9/24)
- 6              Neuromuscular Excitation (9/29)  
                 Muscle Glycogen (10/1)
- 7              Heart dissection (10/6)  
                 Physiology of Cardiac muscle (10/8)
- 8              Lecture and Review (10/13)  
                 **(10/15) Campus Furlough Day**
- 9              **Exam 2 (10/20)**  
                 ECG and Respiration (10/22)
- 10             Exercise physiology (10/27)  
                 Surgical Procedures (10/29)
- 11             Demonstration(11/3)  
                 Unilateral nephrectomy (11/5)
- 12             Complete nephrectomy Lecture (11/10)  
                 Lecture and Review (11/12)
- 13             **Exam 3 (11/17)**  
                 **November 23<sup>th</sup> -27<sup>th</sup> Thanksgiving Holiday**
- 14             Temperature regulation (12/1)  
                 Endocrine physiology (12/3)
- 15             Glomerular filtration (12/8)  
                 Lecture and review (12/10)
- 16             **Dec 15 Exam 4 10:00 am to 1150**