

BIOLOGY 3251

Animal Physiology - Organ System Operation and Regulation (2015)

Instructor: Dr. Robert J. Omeljaniuk, CB-4013, 343-8236

1. Calendar Description.

Animal Physiology - Organ System Operation and Regulation

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A comparative study of animal organ system physiology. Areas to be discussed include the structure, operation and regulation of muscle, cardiovascular systems, osmotic and ionic regulation, respiratory- and gastrointestinal systems.

Notes: *Students who have previous credit in Biology 2035 may not take Biology 3250 or 3251 or 3253 for credit. An additional fee (see Miscellaneous Fees) is required for this course.*

2. Marking Scheme.

a. Lab reports: 4 X 10% = 40% of final mark; and

b. Term Tests:

(1) Term test #01. 27 Jan 2015. 20% Final Mark;

(2) Term test #02. 03 Mar 2015. 20% Final Mark; and

(3) Term test #03. 31 Mar 2015. 20% Final Mark.

3. Laboratories.

a. Lab coordinator: Mr. Michael Moore, CB-3011A; 343-8909.

b. Schedule:

Lab schedule and lab report submission dates are subject to change in accordance with availability of animal preparations and instrumentation.

(1) Week of January 12: Kidney function. Formal report due January 27 in class.

(2) Week of January 19: Neurophysiology Phase II: Experiment. Formal report due February 02 in class.

(4) Week of February 09: Muscle physiology. Formal report February 23 in class.

(5) Week of March 09. Cardiac physiology-heart function. Formal report due March 16 in class.

c. Lab Reports.

- (1) Due as indicated in laboratory schedule;
- (2) Late reports will not be accepted without medical or compassionate explanations.
- (3) Reports will be marked and returned the following week.
- (4) Format. Neatly written, typed, or word-processed according to the manuscript requirements for Canadian Journal of Zoology.
- (5) Illegible reports will not be accepted; plagiarism, to any extent, will not be accepted.
- (6) The textbook is the primary reference for lab reports. Nonetheless, additional reference material for reports is located in library in regular stacks and on reserve. Websites are not authorized as references although peer-reviewed journals accessible on the internet are authorized and are to be appropriately cited in accordance with CJZ instructions.
- (7) Report Marks.
 - (a) Introduction: Provides the scientific basis for the work performed: P/F. **Failure results in Report returned not marked.**
 - (b) Results: Drafted figures, tables and a textual summary of experimental findings: 3.0 marks and P/F. **Failure results in Report returned not marked.**
 - (c) Discussion: Discussion of the scientific basis and biological relevance of the data, and comparison of the results with published findings; this section also includes appropriate presentation of cited references; 7.0 marks.

ADVICE. Formal reports require significant effort for data presentation, reading and interpreting reference material, and incorporating relevant reference material into meaningful discussions.

4, Proposed curriculum: See attached pages.

5. Textbooks:

- a. Boron, W.F. and E.L. Boulpaep. Medical Physiology, 2nd ed. (revised) 2012. Saunders, Philadelphia PA. (1337 pp).; and
- b. Biology 3251 Lab Manual. Available as part of the Comparative Animal Physiology I & II Lab Manual in the LU Alumni Bookstore.