

BIOLOGY 3253:
Animal Physiology: Intracellular Communication and Coordination.
2020
Serial
Instructor: Dr. Robert J. Omeljaniuk, CB-4013.

NOTE: As a consequence of altered operations at Lakehead University this course, and others, are being conducted differently from their historical patterns. Thank you for your consideration and patience with these temporary changes.

This proposed course outline is subject to change in response to changing conditions and to developments in lecture delivery methods, and in response to novel developments in the evaluation of student progress such as testing paradigms.

Thank you again for your thoughtful understanding.

1. CALENDAR DESCRIPTION.

Biology 3253. Animal Physiology: Intracellular Communication and Coordination.
3-0; 0-0.

Description: An examination of integrated intracellular communication mechanisms which enable extracellular messengers, including hormones, neurotransmitters and drugs, to exert their effects. Areas to be discussed include primary messenger receptors, intracellular signaling mechanism, and cellular adaptation to messenger stimuli.

2. MARKING SCHEME.

NOTES.

1. The administration of tests is yet to be determined as this is a novel distance education course. Currently, tests will be long answer, hand-written, and accompanied by hand-drawn figures and tables. Nonetheless, the final nature of the tests remains to be conclusively determined.
2. Tests will be conducted on dates identified and during allocated class times; test papers must be submitted prior to the conclusion of the class time. Some time allowance (minutes) for electronic transmission may be allocated. Please note that you may need to have access to a scanner to submit your test electronically and you should be well versed in its operation.
3. Actual submission protocol for test papers remains to be determined.

In plain language, there is still a lot to get figured out. In the event that you can defer taking this course to the next academic year, there may be some practical merit in considering that course of action in anticipation that regular in-house classes will resume.

- a. Term Test. 40 % of final mark 07 October 2020.
- b. Term Test. 60 % of final mark 25 November 2020.

3. TENTATIVE LECTURE OUTLINE.

- a. Introduction;
- b. Cell membrane;
- c. Cytoskeleton;
- d. Nucleus;
- e. Endoplasmic Reticulum:Golgi complex;
- f. Exocytosis: structures and molecular processing;
- g. Primary Messenger Receptors;
- h. Specific Signaling Mechanisms; and
- i. Cellular adaptation to messenger stimuli.

5. TEXTBOOKS.

- a. Boron, W.F. and Boulpaep, E.L. 2016. Medical Physiology, 3rd ed. Saunders – Elsevier, Philadelphia PA. 1337 pp.
- b. Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., and Walter, P. 2015. Molecular Biology of the Cell, 6th ed. Garland Science, New York NY. 1242 pp.
- b. Krauss, G. 2008. Biochemistry of Signal Transduction and Regulation, 4th ed. Wiley-VCH, Weinheim. 626 pp. Only a recommendation!