BIOLOGY 3253:

Tentative Course Outline

Animal Physiology: Intracellular Communication and Coordination.

2026 Serial

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

Office Hours by Appointment

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.

a. Term Test #01. 20% Final Mark. 22 Sep 2026.

b. Term Test 01. 40 % of final mark 27 October 2026.

c. Term Test 02. 40 % of final mark 01 December 2026.

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; and
h. Specific Signaling Mechanisms.

5. TEXTBOOKS.

a. Boron, W.F. and Boulpaep, E.L. 2016. Medical Physiology, 3rd ed. SaundersElsevier, Philadelphia PA. 1337 pp. (about $188).

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. (about $225).