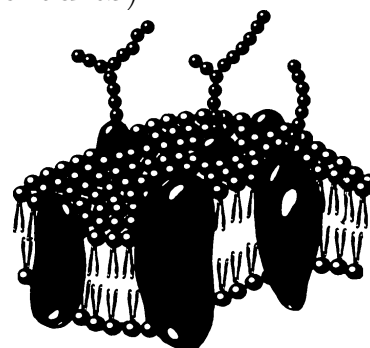


# BIOL 250 —Advanced Cell Biology (4 credits)

Alexey Shipunov

Spring 2013



## SYLLABUS

**Class Dates** : January 9 to May 9, 2013

### Course Description :

Advanced Cell Biology will penetrate the field of cellular and molecular biological sciences deeper than Introductory Cell Biology. The course is based on the presumption that students already know basics of cell biology and biochemistry. In turn, several higher-level courses are based on Advanced Cell. Therefore, I will concentrate on topics which are most important for general understanding of cell structure and functions.

### Central Concepts :

Chemical components of cell including DNA and protein structure and interactions; genes and genomes analysis and evolution; membrane structure, transport and cell communication.

**Instructor** : Dr. Alexey Shipunov

**Office** : Moore 229

**Office Hours** : Wednesdays and Fridays, 10 a.m. to 11:50 a.m.

**Phone** : 858-3116

**E-mail** : alexey.shipunov@minotstateu.edu

**Lectures** : Mondays, Wednesdays and Fridays, 12:00 a.m. to 12:50 a.m., Moore 210

**Textbook** : Alberts, B. et al. Essential Cell Biology. 3rd edition. Garland Science, 2009.

**Web site** : [http://ashipunov.info/shipunov/school/biol\\_250/](http://ashipunov.info/shipunov/school/biol_250/)

Please note that lecture slides from the Web site are **not** containing all information which is given on lectures.

**Laboratories** : Mondays 3:00 p.m. to 4:50 p.m., Moore 210

### Grading :

**Four** equal exams are given during the semester. Only the **three best exams** contribute to the final grade. Missed exams count zero points. There are **no make-up** exams.

There are five legitimate reasons for absence: (1) emergency situations, (2) attested medical conditions, (3) military duty, (4) participation in MSU sports events, and (5) dependent sick leave. Absence from exams or laboratories needs to be announced to the instructor in advance. I strongly recommend to attend lectures regularly since lectures are the main reference text.

Receiving zero points for more than one laboratory results in a failed course. Grading of laboratories is based on reports. Written reports are prepared and finished during laboratory sessions and passed to the instructor right after the particular laboratory session.

In addition, at the end of every lecture I will give one short test question to answer.

A total of  $\approx 600$  points can be earned and are distributed as follows (grading points may vary):

**Lecture tests** :  $\approx 60$  points (1–3 points per question)

**Three best exams** :  $\approx$  300 points

**Laboratories** : 240 points (20 points per lab)

**Letter Grades** : A  $\geq$  90%, B  $\geq$  80%, C  $\geq$  70% D  $\geq$  60%, F < 60%.

**Academic Honesty** : Honesty and integrity are central to academic life at Minot State University. Cheating may affect the student in accordance with the grading policy: a **minimum** of one letter grade will be deducted from the grade for academic dishonesty / plagiarism.

**Disability Needs** : In coordination with Disability Support services, reasonable accommodations will be provided for qualified students with disabilities. Please contact the instructor during the first week of class to make arrangements. Additional information is available from MSU Disability Support Services.

**Tentative Course Schedule** :

Week 1	Jan 9, 11	Introduction to cells, microscopy; no lab
Week 2	Jan 14, 16, 18	Chemical components of cells; Lab 1
Week 3	Jan 22, 24	Chemical components of cells; no lab
Week 4	Jan 28, 30	Chemical components of cells; Lab 2
"		1st exam: Feb 1
Week 5	Feb 4, 6, 8	Energy, catalysis and biosynthesis; Lab 3
Week 6	Feb 11, 13, 15	Protein structure and function; Lab 4
Week 7	Feb 20, 22	From DNA to protein; no lab
Week 8	Feb 25, 27	From DNA to protein; Lab 5
"		2nd exam: Mar 1
Week 9	Mar 4, 6, 8	Gene expression; Lab 6
		<i>Week 10: Spring break</i>
Week 11	Mar 18, 20, 22	Analyzing genes and genomes; Lab 7
Week 12	Mar 25, 27	Membrane; Lab 8
Week 13	Apr 3, 5	Membrane; no lab
Week 14	Apr 8, 10	Intercellular transport; Lab 9
"		3rd exam: Apr 12
Week 15	Apr 15, 17, 19	Intercellular transport; Lab 10
Week 16	Apr 22, 24, 26	Cell communication; Lab 11
Week 17	Apr 29, May 1, 3	Cell communication; Lab 12
Week 18		4th exam: Thursday May 9, 12:00–12:50 a.m.

*Please note that the schedule is a subject to change. Only exam dates are fixed.*