

Introduction to Biology. Lecture 1

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Course in general

Description

Course description from Catalog

- This course (GE6) is designed to accommodate one semester of the General Education requirement for non-science majors at Minot State University.
- The course focuses on a comprehensive survey of modern biology with an emphasis on enhancing the science literacy of the college educated student.
- Topics include: cell biology, genetics, evolution by natural selection, systematics, and the impact of human activity on the biosphere.



My description

- Biology is the largest of all sciences, and develops most rapidly. It is simply impossible to cover **BIOLOGY** in one-semester course.
- I choose a strategy to elucidate the most important biological concepts from the standpoint of the **History of Life**.
- We will go through the major events in this history and learn basic chemistry of life, cell construction, genes and DNA, organization of animal body and other fundamental biological ideas.



Instructor

- Dr. Alexey Shipunov
- Office: Moore 229
- Office Hours: Mondays, Wednesdays and Fridays, 11 am to 12 am
- Phone: 858-3116
- E-mail: alexey.shipunov@minotstateu.edu



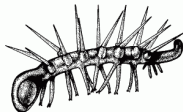
Lectures Mondays, Wednesdays and Fridays, 12:00 am to
12:50 am, Moore 16

Laboratories Tuesdays and Thursdays, Swain 304

Web site

© Shipunov, A. Introduction to Biology [Electronic resource]. 2012—onwards.
Mode of access: http://ashipunov.info/shipunov/school/biol_111

BIOL 111: Introduction to Biology



Course materials:

- [Syllabus](#) (PDF, 0.2 Mb), updated 2012/08/21

- [Lab 5: Cell Craft game](#)
- [Lab 6: Conway's Game of Life](#)

[Back](#)

http://ashipunov.info/shipunov/school/biol_111



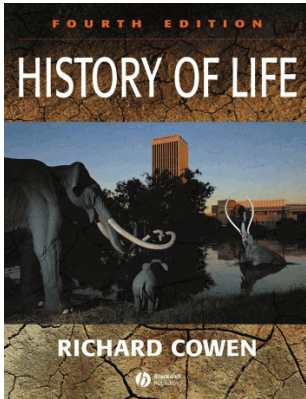
Textbook



WIKIPEDIA
The Free Encyclopedia



Recommended reference



- History of Life (Cowen, 4 ed., 2005)

Course in general

Grading

Exams

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

Absence

Absence from exams or laboratories needs to be announced to the instructor in advance. There are five legitimate reasons for absence:

- A emergency situations,
- B attested medical conditions
- C military duty,
- D participation in MSU sports events,
- E dependent sick leave.

If you have a legitimate reason (see below) it is possible to come for the lab with different section. Please, however, do not forget to inform **both** instructors in advance.

I strongly recommend attending lectures regularly. Lecture contents will be the main source of information required for the exams.

Points

A total of 580 points can be earned and are distributed as follows (grading points may vary):

Four best exams : 400 points

Laboratories : 180 points (15 points per lab)

Letter grades

- $A \geq 90\%$
- $B \geq 80\%$
- $C \geq 70\%$
- $D \geq 60\%$
- $F < 60\%$

A minimum of one letter grade will be deducted from the grade for academic dishonesty / plagiarism.



Course in general

Course schedule

Tentative course sequence: from past to present

- Origin of Earth, basic chemistry
- Origin of life, DNA, RNA and proteins
- First cells, structure of cell
- Animals
- Plants
- Reproduction
- Adaptation, rise and fall of dinosaurs
- Ecology and evolution, the future



Intro test

Multiple choice questions

Question 1

- 1 Why deciduous plants take off their leaves?
- A To prevent freezing
 - B To prevent drying
 - C To get rid of poisonous chemicals

Question 2

2 Where does human digestion process start?

- A In the mouth
- B In the intestines
- C In the stomach

Question 3

3 Which birds do NOT live in Minot on winter?

- A Crows
- B Hummingbirds
- C Sparrows

Question 4

4 Home country of watermelon:

- A Central America
- B Canada
- C South Africa

Question 5

- 5 Why do insectivorous plants eat insects?
- A To obtain the lacking mineral resources
 - B To get an addition to their common “menu”
 - C To get rid of herbivores

Question 6

6 Which insects have no queen?

- A Bumblebees
- B Ants
- C Cockroaches

Question 7

7 Oak tree is pollinated by:

- A Wind
- B Bees
- C Flies

Question 8

8 Spider has:

- A 6 legs
- B 8 legs
- C 4 legs

Question 9

9 Apple flower has:

- A 5 petals
- B 4 petals
- C 3 petals

Question 10

10 Frightened man has:

- A Bigger pupils
- B Smaller pupils
- C Normal pupils

Question 11

11 Polar bears are not eating penguins because:

- A Penguins run very fast
- B They cannot meet
- C Penguins are poisonous for bears

Question 12

12 How many toes are on each of cat's hind legs?

- A 5
- B 4
- C 3

Question 13

13 Pineapple is a:

- A Tree
- B Shrub
- C Herb

Question 14

14 If somebody has an artery cut on the arm or leg, it is recommended:

- A Put a tight bandage below the cut
- B Put a tight bandage above the cut
- C Do nothing

Question 15

15 Which of the following is the most precise statement?

- A We are breathing to support our life
- B We are breathing to obtain the energy from food
- C We are breathing to have enough strength for food consuming

Question 16

16 Which tree is better to plant in Minot house backyard:

- A Sycamore
- B Ash
- C Yew

Question 17



17 Moles eat:

- A Worms
- B Roots
- C Frogs

Question 18

18 Which fish gives birth to the fully developed offspring?

- A Sturgeon
- B Shark
- C Flounder

Question 19

19 Which human organ lives longer?

- A Heart
- B Lungs
- C Brains

Question 20

20 Which plant normally has a longer root?

- A Spruce
- B Chokecherry
- C Blueberry

The key

1B; 2A; 3B; 4C; 5A; 6C; 7A;
8B; 9A; 10A; 11B; 12B;
13C; 14B; 15B; 16B; 17A;
18B; 19A; 20B

Please calculate a sum (every right answer = 1 virtual point)

Summary

- Please download syllabus from the Web site (http://ashipunov.info/shipunov/school/biol_111)
- Five exams, best four will be counted, no make-ups
- The course sequence is the history of life on Earth



For Further Reading



Biology. Wikipedia.

<http://en.wikipedia.org/wiki/Biology>



History of Life. Wikipedia.

http://en.wikipedia.org/wiki/History_of_life



IB Biology Review Guide. Wikibooks.

http://en.wikibooks.org/wiki/IB_Biology
(please only consider this link)

