# BIOLOGY 101
# INTRODUCTORY BIOLOGY
# Winter Quarter 2012

Biology 101 is the first of a two-quarter sequence of Biology courses for *non-majors*. It is not intended for those pursuing an undergraduate major in the biological sciences.

## General Information

### Professors


| Dr. Beth Gray | Ms. Susan Heaphy | Dr. Jackie Augustine |
|---|---|---|
| 361 Science Bldg | 344 Science Bldg | 330 Science Bldg |
| 419-995-8868 | 419-995-8853 | 419-995-8237 |
| gray.210@osu.edu | heaphy.6@osu.edu | augustine.63@osu.edu |
| Labs: 9:10 – 11:10 TR<br>9:10 – 11:10 WF | Lab: 11:20 – 1:20 TR | Lab: 1:30 – 3:30 TR |


### Recommended text

*Campbell Biology: Concepts and Connections, 7th ed*, J.B. Reece, M.R. Taylor, E.J. Simon, and J.L. Dickey. Pearson Benjamin Cummings, Inc., ISBN 9780321696816

- Earlier editions of this text, or any introductory Biology textbook, may be used

### Required item

Turning Technologies ResponseCard RF or ResponseCard RF LCD

### Course Grading

| Points | Item | |
|---|---|---|
| 55 | Exam 1 | Lecture grade |
| 55 | Exam 2 | |
| 70 | Exam 3 | |
| 20 | Clickers | |
| 165 | Lab/Recitation | Lab grade |
| 35 | *New York Times* | |
| 400 | | |

| Grade | Percentage |
|---|---|
| A | 93-100 |
| A- | 90-92 |
| B+ | 87-89 |
| B | 83-86 |
| B- | 80-82 |
| C+ | 77-79 |
| C | 73-76 |
| C- | 70-72 |
| D+ | 67-69 |
| D | 60-66 |
| E | 59 & below |

- Neither the Lecture nor Lab grade may exceed 200 points.

### Carmen

Carmen is OSU's online learning management system. It can be accessed from the OSU Lima homepage or at https://carmen.osu.edu. Your username is your OSU Internet Username (last name.# ), and the password is the same as for your OSU e-mail account. I will post lecture notes, recorded lectures, links, pre-exam quizzes, and grades there.

## Lecture Information

Biology 101 lectures are 11:30 – 12:30 Monday, Wednesday and Friday in Science Bldg. 100. Lectures will also be recorded and posted on Carmen for review. However, if there are technical problems, a recording might not be possible.

### Exams

There will be three exams based on lecture material. These exams are not cumulative. Exams will be given on assigned dates unless circumstances warrant a schedule change.

- **Exam etiquette:** You may not bring food or drink to an exam. **Cell phones are to be silenced and buried inside of a backpack or purse.** You cannot answer any call for any reason during any exam.
- **Missed Exam:** Contact me within 24 hours to reschedule. Failure to do so within 24 hours will result in point loss from the make-up exam, unless you can provide verifiable justification for the absence and lack of communication (e.g., hospital discharge papers). I reserve the right to change the make-up exam format (e.g. to essay) or assign a term paper as a substitute for a make-up exam.

### Clickers

Biology 101 uses a Classroom Response System, commonly known as "Clickers," to reinforce learning and encourage attendance. Lectures will include questions for you to answer, allowing you to earn points for correct answers or general participation. As such, you must obtain either a Turning Technologies ResponseCard RF or ResponseCard RF LCD. You CAN NOT share a ResponseCard with another student taking the course this quarter. ResponseCards will be in use each lecture. Many questions will be asked, but only some will be worth points. You will not know if a question was worth points until it is posted on Carmen's grade book. Jan. 11 will be the first lecture in which points may be earned.

ResponseCards can be purchased from the Bookstore or are available online from a variety of sources. RF and RF LCD models do the same thing, but the RF LCD model displays the channel you are on and your response to questions.

#### Student Responsibilities

- **Obtain your ResponseCard and bring it to class ready to use by Jan. 11**. If ordering online, please factor in shipping time.
- Register your ResponseCard ID through Carmen, or by going directly to http://student.turningtechnologies.com, by 11:00 a.m, Jan. 11. **Provide your OSU Internet Username (lastname.#) in the "Other" field.**
- Bring your ResponseCard to *each* Biology 101 lecture.
- Set your ResponseCard to channel 41 at the start of each lecture.
- Keep your ResponseCard in working order throughout the quarter. You're encouraged to have a spare set of batteries on-hand at all times.
- *Failure to register your ResponseCard by Jan. 11 will incur a 2 point penalty*.

**Cell phone:** Silence it and put it away. You don't need to consult it during lecture.

Lecture schedule subject to change by instructor as needed

| DATE | DAY | TOPIC | TEXT CHAPTER |
|---|---|---|---|
| Jan. 4 | W | Biology: Exploring Life | 1 |
| Jan. 6 | F | The Chemical Basis of Life | 2 |
| Jan. 9 | M | The Molecules of Cells | 3 |
| Jan. 11 | W | A Tour of the Cell | 4 |
| Jan. 13 | F | The Working Cell | 5 |
| Jan. 16 | M | **DR. MARTIN LUTHER KING DAY no classes** | |
| Jan. 18 | W | How Cells Harvest Chemical Energy | 6 |
| Jan. 20 | F | Photosynthesis: Using Light to Make Food | 7 |
| Jan. 23 | M | **EXAM 1** (Lectures Jan. 4 – Jan. 20) | |
| Jan. 25 | W | The Cellular Basis of Reproduction and Inheritance | 8 |
| Jan. 27 | F | Patterns of Inheritance | 9 |
| Jan. 30 | M | Patterns of Inheritance | 9 |
| Feb. 1 | W | Patterns of Inheritance | 9 |
| Feb. 3 | F | Molecular Biology of the Gene | 10 |
| Feb. 6 | M | How Populations Evolve | 13 |
| Feb. 8 | W | How Populations Evolve | 13 |
| Feb. 10 | F | The Origin of Species | 14 |
| Feb. 13 | M | Tracing Evolutionary History: Systematics | 15.14-19 |
| Feb. 15 | W | Microbial Life: Prokaryotes and Protists | 16 |
| Feb. 17 | F | The Evolution of Plant and Fungal Diversity | 17 |
| Feb. 20 | M | **EXAM 2** (Lectures Jan. 25 – Feb. 13) | |
| Feb. 22 | W | Plant Reproduction | 31.9-14 |
| Feb. 24 | F | The Evolution of Invertebrate Diversity | 18 |
| Feb. 27 | M | The Evolution of Invertebrate Diversity | 18 |
| Feb. 29 | W | The Evolution of Vertebrate Diversity | 19 |
| Mar. 2 | F | Population Ecology | 36 |
| Mar. 5 | M | Communities and Ecosystems | 37 |
| Mar. 7 | W | Communities and Ecosystems | 37 |
| Mar. 9 | F | The Biosphere: An Introduction to Earth's Diverse Environments | 34 |
| Mar. 12 | M | **10:00 FINAL EXAM** (Lectures Feb. 15 – Mar. 9) | |

**GEC Category:** Biology 101 fulfills GEC category 2. Breadth: A. Natural Science

**Goals**

Students gain understanding of the principles, theories, and methods of modern science, the relationship between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world.

**Expected Learning Outcomes**

1. Students understand the basic facts, principles, theories and methods of modern science.
2. Students learn key events in the history of science.
3. Students provide examples of the inter-dependence of scientific and technological developments.
4. Students discuss social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

Details on the Learning Outcomes are posted on Carmen at Biology 101 / Content / Course information

## Laboratory information

Biology 101 Lab/Recitation sessions meet on Tuesday and Thursday or Wednesday and Friday in Science Bldg. 370. The intent is to provide additional explanation of lecture material and hands-on examples of subject matter. Half of the points for this course are earned in Lab/Recitation. This involves the *New York Times* project, as well as quizzes, problem sets, and other assessment projects.

| DATE | DAY | TOPIC | TEXT CHAPTER |
|---|---|---|---|
| Jan. 5/6 | R/F | Scientific Inquiry | 1 |
| Jan. 10/11 | T/W | Chemistry of Water and other Molecules | 2 |
| Jan. 12/13 | R/F | Chemical Composition of Food | 3 |
| Jan. 17/18 | T/W | Enzyme Study | 5.3 |
| Jan. 19/20 | R/F | Cell Biology; Review for Exam 1 | 4 |
| Jan. 24/25 | T/W | Systematics | 15.4 |
| Jan. 26/27 | R/F | Cellular Reproduction, Onion root tips | 8 |
| Jan. 31/Feb. 1 | T/W | Basic Genetic Principles | 9.1 |
| Feb. 2/3 | R/F | FlyLab | 9.2 |
| Feb. 7/8 | T/W | Molecular Genetics and Evolution | 10, 13 |
| Feb. 9/10 | R/F | EvolutionLab | 13 |
| Feb. 14/15 | T/W | Homology, Analogy & Speciation | 13, 14 |
| Feb. 16/17 | R/F | Prokaryotes and Protists; Review for Exam 2 | 16 |
| Feb. 21/22 | T/W | Plant Kingdom, Fungi | 17 |
| Feb. 23/24 | R/F | Plant Reproduction | 31.9 – 31.13 |
| Feb. 28/29 | T/W | Invertebrate animals | 18 |
| Mar. 1/2 | R/F | Vertebrate animals | 19 |
| Mar. 6/7 | T/W | Populations and Communities | 36, 37 |
| Mar. 8/9 | R/F | Community Interactions; Review for Exam 3 | 37, 34 |

**Laboratory topics may be changed at lab instructor's discretion.**

## Winter notice

If weather forces a delay, classes will usually begin at 10:00 a.m. Students should report to where they would normally be at 10:00 a.m. The portion of class scheduled prior to the delay time is cancelled. For example, if campus opens at 10:00 a.m., a 9:10-11:10 lab would start at 10:00 and end at 11:10. Biology 101 lectures and 11:20 and 1:30 labs will be conducted and students are responsible for any material presented.

## Academic Misconduct

Violations of the University Code of Student Conduct will be reported to the OSU Committee on Academic Misconduct (COAM) in Columbus. Familiarize yourself with the University Code of Student Conduct and COAM at http://oaa.osu.edu/coam.html and http://oaa.osu.edu/coamfaqs.html