



USABO 301

Course Description & Goals

This intensive course prepares high school students for the USABO Semifinal Exam by covering advanced topics in cell biology, genetics, organismal biology, ecology, and evolution, aligned with the Campbell Biology textbook and past exam materials. Students will engage in interactive lessons, mock exams, and training in data analysis and experimentation to develop critical problem-solving skills. Personalized feedback and detailed strategies will help students master complex concepts and excel in test-taking. Ideal for motivated students with a strong biology foundation, this 6-week course builds the expertise and confidence needed to succeed in competitive biology.

Instructor

John Kim – STEM & ROOT Academy Founder

Class Schedule

2025 Spring: 2/11-3/23 (12 sessions, 24 hours), Tuesday 6-8 PM (PT) & Sunday 5-7 PM (PT)

**USABO Semifinal Exam Date: March 27, 2025*

Pre-requisites

USABO 201 or USABO semifinalist (students who have previously passed the open exam)

Key Features of the Program

- 100% instruction by the founder
- English-only, Live Zoom Classes
- Recorded lectures provided in case of absences
- Homework and grading included for every class
- We will provide all class materials.

Class Format

- Lecture
 - 1) Zoom (Live Online)
 - 2) Recorded Video- If the live class schedule does not work, we offer the option to take the entire semester through recorded sessions. All homework and materials will be provided, and homework submissions will be graded in the same way as for live classes.

- Google Classroom
 - Providing Lecture Materials and other materials
 - Assigning / grading HW
 - Communicating with students
 - Keeping students informed of current and upcoming events

Assignment Submission

- Homework must be submitted by **7PM (PT) a day before** the following class. Assignments will be graded as soon as possible such that students have enough time to make corrections and know what questions to ask before class.
- Your homework must be submitted as **“one” PDF or google doc file only. (No photos such as .jpeg)**
- **Recommended PDF file converters or apps** to write on PDF files
 - For PC, use www.combinepdf.com : jpeg → PDF conversion
 - For Mac/Ipad: GoodNotes, Notability, Documents, Onenote, etc.
 - No Kami App– not compatible with google classroom. But if you still want to use Kami, generate PDF file using the app first and use www.combinepdf.com to do PDF → PDF conversion. Submit PDF file generated from the “combinepdf.com”

Multiple Choice Questions

1. E
2. A
3. D
4. A
5. E
6. B
7. C
8. D
9. A
10. E
11. E
12. C
13. B
14. C
15. A
16. B
17. D

Google doc

Chapter 45 Hormones and the Endocrine System

The questions in Chapter 45 have been revised to ensure that terms are consistent with those included in the textbook chapter and are also reorganized to mirror the reorganization of the chapter. In addition, some questions cover material presented in figures from the textbook chapter.

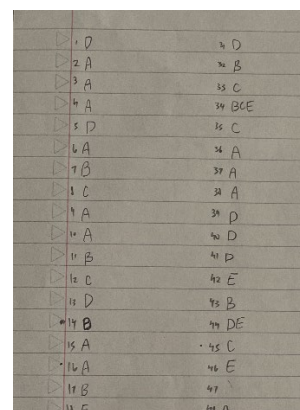
Multiple-Choice Questions

- 1) Which of the following statements about hormones is *incorrect*?
 - A) They are produced by endocrine glands.
 - B) They are modified amino acids, peptides, or steroid molecules.
 - C) They are carried by the circulatory system.
 - D) They are used to communicate between different organisms.
 - E) They elicit specific biological responses from target cells.

- 2) The secretion of hormone A causes a change in the amount of protein X in an organism. If this mechanism works by positive feedback, which of the following statements represents the fact?
 - A) An increase in A produces an increase in X.
 - B) An increase in X produces a decrease in A.
 - C) A decrease in A produces an increase in X.
 - D) A and B are correct.
 - E) B and C are correct.

- 3) Which of the following is (are) true?
 - A) Hormones regulate cellular functions, and generally negative feedback regulates hormone levels.
 - B) The circulating level of a hormone is held constant through a series of positive feedback loops.
 - C) Both lipid-soluble hormones and water-soluble hormones bind to intracellular protein receptors.
 - D) The ducts of endocrine organs release their contents into the bloodstream.
 - E) Only A and C are true.

PDF



jpeg/google doc



Make-up Policies

- If a student is unable to attend a class, we will provide a recording of the live lecture. Additionally, the full class content will be available in our Google Classroom, allowing students to stay on track and complete their homework.
- After attending the live class, if students request a recording for review, we provide it.
- Make-up recording will be available until the following class. Make sure to watch it as soon as possible to keep your pace. If an extension is needed, we will grant it upon request.
- Students/parents must notify STEM & ROOT Academy as promptly as possible of any absence.

Class Policies, Expectations and Rules

- Join every class on time (**5 min prior to each class**) with your materials (lecture notes, textbook, supplementary handouts) out and ready.
- Spend **at least 30 minutes** (**right before each class**) reviewing/previewing materials.
- Turn on webcam and **show your face**. I would like to see what you are up to, just as you would be required to attend in-person classes.
- **Take notes** while listening to my lecture.
- **Actively participate in Q&A** during the class.
- Submit weekly assignments **on time** (due date/time for each HW will be set/notified via google classroom)
- Eating and drinking is allowed only if it does not cause any distraction.

Academic Dishonesty

Plagiarism (the practice of taking someone else's work or ideas and passing them off as one's own) is a severe offense. Examples of academic dishonesty include (not an exhaustive list): **copying work from another student or the internet, using online searches to find answers** to the end of chapter quizzes, posting answers to assignments online.