



USABO 301-2026

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 course builds the expertise and confidence needed to succeed in competitive biology.

Instructor

John Kim – STEM & ROOT Academy Founder /Director

Pre-requisites

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

Lecture

Total of 12 sessions (24 hours) - recorded in February 2025.

All recorded lectures will be available for viewing until the exam date: March 4, 2026.

**USABO Semifinal Exam Date: March 4, 2026*

Key Features of the Program

- 100% instruction by the director
- English-only, Recording Classes
- We will provide all class materials.
- Homework and grading included



Course Materials & Format

The USABO Semifinal covers dozens of textbooks, which can be overwhelming. I have extracted the most essential core concepts and organized them into streamlined study materials.

Strategy: Focus on high-yield topics to maximize efficiency within a limited timeframe.

Google Classroom

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

Homework & Grading

Please note that the homework due dates listed in the materials follow the original recording schedule from February 2025. Compare the recording dates with your current study pace to manage your assignments. If you leave a comment when submitting your homework, I will personally grade it.

Assignment Submission

- 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

- E
- A
- D
- A
- E
- B
- C
- D
- A
- E
- E
- C
- B
- C
- B
- A
- B
- D

Google doc

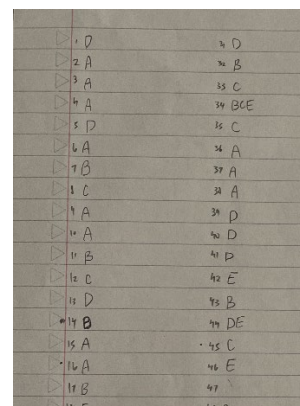
Chapter 45 Hormones and the Endocrine System

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

- 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.
- 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 *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.
- 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

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.**