

Kingsborough Community College, The City University of New York
Department of Biological Sciences



Syllabus BIO 100

THE CUNY COMMON CORE: SELECTED TOPICS IN BIOLOGY
(3 credit and 3 hours)

Fall 2021

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SYLLABUS FOR BIO 100
THE CUNY COMMON CORE: SELECTED TOPICS IN BIOLOGY

Course description: For non-science majors and those who plan to transfer to senior colleges within CUNY. Through lecture and discussion, selected biological topics, such as evolution, ecology, genetics, and human biology will be explored. For each topic, interactive computerized lab experiences involving formulating hypotheses and the process of scientific inquiry will be conducted. In addition, current ethical issues in science will be studied. This course satisfies the CUNY Common Core Requirement for a course in Life and Physical Sciences.

Credits/hours: 3 credits, 3 hours per week

Textbook: We will be using **free** online openstax book titled “Concepts of Biology”

The online link to the book is:

<https://openstax.org/details/books/concepts-biology>

Lab information:

Labs will be performed online. We will be using a software called SimUText and students will be required to purchase access to these labs. Link for registration to SimUtext labs and more information is posted **on Blackboard**.

Course Goals for student learning outcomes

1. Identify and apply the fundamental concepts and methods of biology.
2. Apply the scientific method to explore natural phenomena, including hypothesis development, observation, experimentation, measurement, data analysis, and data presentation.
3. Use the tools of a scientific discipline to carry out collaborative laboratory investigations.
4. Gather, analyze, and interpret data and present it in an effective written laboratory or fieldwork report.
5. Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.

Grading Policy:

3 Lecture Exams:	30%
1 Final Exam:	20%
SimUText lab reports:	30%
Presentation:	5%
Assignments/activities:	15% (these include class discussions, writing assignments, group work etc.)

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Week #	Topics	Resources (Chapters are from ebook: https://openstax.org/details/books/concepts-biology)
1	<p>The Process of Science/The Scientific Method Writing assignment on Scientific method (coral bleaching study) Making observations: In class case study to evaluate whether MMR Vaccination increases risk of autism in children SimUText Lab 1: Understanding Experimental design</p>	Chapter 1 (Topic 1.2)
2	<p>Characteristics/Properties of life Online Activity: Observing the characteristic of life. Life's diversity (classification: kingdoms) Eukaryotes vs prokaryotes</p>	<p>http://www.exploratorium.edu/imaging-station/activities/classroom/characteristics/ca_characteristics.php Chapter 1 (Topic 1.1) Chapter 3 (Topic 3.2) Chapter 12 (Topic 12.1) Chapter 13 (Topic 13.1-13.4)</p>
3	<p>Evolution Principle: Darwin's observations and deductions Natural selection Evidence: Fossil record, Comparative anatomy & physiology (form/function) SimUText Lab 2: Darwinian snails</p>	Chapter 11 (Topics 11.1 to 11.5)
4.	<p>Evolution Adaptations and extinction Human Evolution - Did humans evolve from monkeys? Evolution of human skin color Students will go to The American Museum of Natural History: Hall of Man (independent) On campus group activity to compare skull of hominins (not applicable online)</p>	PowerPoints and weblinks will be provided for this topic
5.	<p>Ecology Population and community ecology Organization: population, community, ecosystems, biome and biosphere Populations: importance of growth and size. Impact of human population on the environment Population examination Analysis of population data SimUText Lab 3 Isle Royale</p>	Chapter 19 (Topic 19.1 to 19.4)
6.	<p>Ecology: Food chain, food web and trophic levels Biomes and the biosphere</p>	Chapter 20 Topics (20.1 to 20.4)

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	<p>Changes in ecosystems over time</p> <p>SimUText Lab 4 Nutrient pollution</p>	
7.	<p>Ecology: Human impact on the Biosphere Global warming, Pollution, Population explosion, Feeding the population Fossil fuels, Alternative energy sources</p>	<p>Chapter 21 Topics (21.1 to 21.3)</p>
8	<p>Current topics in biology: Diseases Introduction to diseases Virus replication basics Spread of diseases: Understanding epidemic, pandemic SimUText Lab 5: How diseases spread</p>	<p>Chapter 17 Topics 17.1 Weblinks will be provided for this topic</p>
9	<p>Bioethics Introduction to ethics and ethics in science Case study Discussion board assignment</p>	<p>Weblinks and case study will be provided</p>
10	<p>Current topics in biology: Food and Nutrition Labels: RDA and nutritional information Organic foods: pros and cons Genetically modified foods Ethical concerns Analysis of food labels. Testing of label claims (example weight of food product in package)</p>	<p>PowerPoints and weblinks will be provided for this topic</p>
11	<p>Current topics in biology: The Human Body and Wellness Obesity Heart Disease Why are certain populations at greater risk? Is there an ethical issue? Assessing your health risk BMI calculation</p>	<p>PowerPoints and weblinks will be provided for this topic http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/risk.htm</p>
12	<p>Student presentations on a biological topic of interest. The presentation needs to include: The techniques used to study the topic How data are gathered and analyzed Ethical concerns Student's position</p>	<p>List of topics to be given by the instructor in the class. Students can pick a topic of their interest after consulting with instructor</p>