

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

**BIO 100**

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

**Fall 2020**

**Syllabus and Course Information**

**Instructor: Navneet Kaur**  
**Email: [Navneet.kaur@kbcc.cuny.edu](mailto:Navneet.kaur@kbcc.cuny.edu)**

**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>

**Additional instructional materials:**

**Smart Science Lab Units:** Students are required to perform online labs on Smart Science.

Students require codes for registering to this site and the online codes are available and can be purchased at link below

<https://link.waveapps.com/gpk2rk-hc48fu>

**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: 3 \* 12 = 36%

Smart science lab reports: 5 \* 6 = 30%

Presentation: = 10%

Discussion board assignments 2\*2 = 4%

1 Final Exam: = 20%

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

Week #	Topics	Resources (Chapters are from ebook)
1	<p><b>The Process of Science/The Scientific Method</b> Writing assignment on Scientific method Making observations: In class case study to evaluate whether MMR Vaccination increases risk of autism in children</p>	Chapter 1 (Topic 1.2)
2	<p><b>Characteristics/Properties of life</b> Online Activity: Observing the characteristic of life.</p> <p>Life's diversity (classification: kingdoms) Eukaryotes vs prokaryotes</p> <p><u>Smart Science lab: Simple Graphs</u>. Lab report to be submitted online</p>	<p>Chapter 1 (Topic 1.1) <a href="http://www.exploratorium.edu/imaging-station/activities/classroom/characteristics/ca_characteristics.php">http://www.exploratorium.edu/imaging-station/activities/classroom/characteristics/ca_characteristics.php</a></p> <p>Chapter 3 (Topic 3.2) Chapter 12 (Topic 12.1) Chapter 13 (Topic 13.1-13.4)</p>
3	<p><b>Evolution</b> Principle: Darwin's observations and deductions Natural selection Evidence:</p> <ul style="list-style-type: none"> <li>○ Fossil record</li> <li>○ Comparative anatomy &amp; physiology (form/function)</li> </ul> <p><u>Smart Science lab: Natural Selection Lab</u>. Lab report to be submitted online</p>	Chapter 11 (Topics 11.1 to 11.5)
4.	<p><b>Evolution</b> 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) Collaborative lab report on Hall of Man study On campus group activity to compare skull of hominins</p>	Handouts will be provided for this topic
5.	<p><b>Ecology</b> 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</p>	<p>Chapter 19 (Topic 19.1 to 19.4) <a href="http://www.populationinstitute.org/?gclid=CJjt4vXKlq4CFUFN4Aod8CGNKQ">http://www.populationinstitute.org/?gclid=CJjt4vXKlq4CFUFN4Aod8CGNKQ</a></p> <p><a href="http://www.globalchange.umich.edu/globalchange2/current/lectures/human_pop/human_pop.html">http://www.globalchange.umich.edu/globalchange2/current/lectures/human_pop/human_pop.html</a></p>

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

6.	<p><b>Ecology:</b>          Food chain, food web and trophic levels          Biomes and the biosphere          Changes in ecosystems over time  <u>2 Smart Science labs: Food Webs and Food web exercise</u>          Lab report to be submitted online          Field observations on campus (done as a class)</p>	<p>Chapter 20          Topics( 20.1 to 20.4)</p>
7.	<p><b>Human impact on the Biosphere</b>          Global warming, Pollution, Population explosion, Feeding the population          Fossil fuels, Alternative energy sources          Use of KCC Aquarium for study of Marine Animal Behavior  <u>Smart Science lab: Seed germination with Pollutants</u>          Lab report to be submitted online</p>	<p>Chapter 21          Topics (21.1 to 21.3)</p>
8	<p><b>Bioethics</b>          Introduction to ethics and ethics in science          Case study (in class)</p>	<p><a href="http://www.bioethics.iastate.edu/classroom/case_studies.html">http://www.bioethics.iastate.edu/classroom/case_studies.html</a></p>
9	<p><b>Current topics in biology: Food and Nutrition</b>          Labels: RDA and nutritional information          Organic foods: pros and cons          Genetically modified foods          Ethical concerns          Analysis of food labels (in class). Testing of label claims (example weight of food product in package)  <u>Smart Science lab: Yeast and sugar.</u> Lab report to be submitted online</p>	<p>Handouts will be provided for this topic</p>
10	<p><b>Current topics in biology: The Human Body and Wellness</b>          Obesity          Heart Disease          Why are certain populations at greater risk? Is there an ethical issue?          Assessing your health risk (in class):          BMI calculation:</p>	<p>Handouts will be provided for this topic</p> <p><a href="http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/risk.htm">http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/risk.htm</a></p> <p><a href="http://www.skinbodyfitness.com/mr_bmi_bfp.htm">http://www.skinbodyfitness.com/mr_bmi_bfp.htm</a></p>
11	<p><b>Current topics in biology: Genetics</b>          Genetic testing          Stem cells</p>	<p><a href="http://www.stemcellresearch.org/">http://www.stemcellresearch.org/</a></p>

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

	Gene Therapy Human genome project Ethical Issues	<a href="http://ghr.nlm.nih.gov/handbook/therapy/genetherapy">http://ghr.nlm.nih.gov/handbook/therapy/genetherapy</a>
12	<b>Student presentations on a biological topic of interest.</b> The presentation needs to include: The techniques used to study the topic How data are gathered and analyzed Ethical concerns Students position	List of topics to be given by the instructor in the class. Students can however pick a topic of their interest after consulting with instructor