KINGSBOROUGH COMMUNITY COLLEGE
The City University of New York

CURRICULUM DATA TRANSMITTAL SHEET

DEPARTMENT Biological Sciences **DATE** 3/15/12

Title of Course or Degree Change: The CUNY Common Core: Selected Topics in Biology

Change(s) Initiated: (Please check)

- ☐ Letter of Intent
- ☐ Closing of Degree Program
- ☒ New Course*
- ☐ New 82 Course
- ☐ New Certificate Program
- ☐ Change in Pre/Co-Requisite
- ☐ Deletion of Course
- ☒ Proposal
- ☐ Proposal (Letter of Intent sent previously)
- ☐ Change in Degree Requirements
- ☐ Change in Degree Requirements (adding concentration)
- ☐ Change in Discipline Code
- ☐ Change in Description
- ☐ Change in Course Titles, Numbers, Credits &/or Hours
- ☐ Other (please describe): ______

PLEASE ATTACH PERTINENT MATERIAL TO ILLUSTRATE AND EXPLAIN ALL CHANGES

I. DEPARTMENTAL ACTION

Action by Department and/or Departmental Committee, if required:

Date approved 3/13/12 **Signature, Committee Chairperson:** ______

Signature, Department Chairperson: ______

II. PROVOST ACTION

Provost to act within 30 days of receipt and forward to College-wide Curriculum Committee exercising one of the following options:

A. **Approved** ☐ B. **Returned to department with comments** ☐

Recommendations (if any): ______

Signature, Provost: ______ **Date:** ______

III. CURRICULUM SUB-COMMITTEE RECOMMENDATIONS (**FOR NEW COURSES ONLY*):

A. **Approved** ☐ B. **Tabled** ☐ **(no action to be taken by Curriculum Committee)**

Recommendations (if any): ______

Signature, Sub-Committee Chair: ______ **Date:** ______

IV. COLLEGE-WIDE CURRICULUM COMMITTEE ACTION

Committee to act within 30 days of receipt, exercising **one** of the following options:

A. **Approved** ☐ (forwarded to Steering Committee)
B. **Tabled** ☐ (Department notified)
C. **Not Approved** ☐ (Department notified)

Signature, Chairperson of Curriculum Committee ______ **Date:** ______

Revised/Winter 08

KINGSBOROUGH COMMUNITY COLLEGE

THE CITY UNIVERSITY OF NEW YORK

FORMAT FOR PRESENTATION OF CURRICULUM PROPOSALS

1. DEPARTMENT, COURSE NUMBER AND TITLE: BIOLOGICAL SCIENCES, BIO 1, THE CUNY COMMON CORE: SELECTED TOPICS IN BIOLOGY

2. DOES THIS COURSE MEET DISTRIBUTION REQUIREMENTS FOR GROUPS I-V? IF SO, WHICH GROUP? THIS COURSE IS PART OF THE CUNY PATHWAYS REQUIRED CORE, GROUP C: LIFE AND PHYSICAL SCIENCES

3. TRANSFERABILITY OF THIS COURSE. DESCRIBE HOW THIS COURSE TRANSFERS (required for A.S. degree course). If A.A.S. degree course and does not transfer, justify role of course, i.e., describe other learning objectives met: THE COURSE WILL TRANSFER WITHIN CUNY, BUT WILL NOT TRANSFER AS A LAB SCIENC OUTSIDE OF CUNY.

   BULLETIN DESCRIPTION OF COURSE: 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.

4. NUMBER OF WEEKLY CLASS HOURS (please indicate the number of hours per week spent in a lab, hours spent on site doing fieldwork, hours of supervision and hours in classroom-- if applicable): 1 HOUR LECTURE, 2 HOURS LAB/SIMULATIONS,

5. NUMBER OF CREDITS: 3

6. COURSE PREREQUISITES AND COREQUISITES
   A. PREREQUISITES: NONE
   B. COREQUISITES: NONE
   C. PRE OR COREQ: NONE

7. BRIEF RATIONALE TO JUSTIFY PROPOSED COURSE TO INCLUDE:
   A. ENROLLMENT SUMMARIES, IF PREVIOUSLY OFFERED AS AN 82: NOT PREVIOUSLY OFFERED
   B. PROJECTED ENROLLMENT: 24 STUDENTS PER SECTION
   C. CLASS LIMITS: 24 STUDENTS PER SECTION
   D. FREQUENCY COURSE IS LIKELY TO BE OFFERED: EVERY SEMESTER AND MODULE
   E. ROLE OF COURSE IN DEPARTMENT'S CURRICULUM AND COLLEGE'S MISSION: FULFILLS REQUIREMENT FO A 3 CREDIT COURSE FOR THE CUNY PATHWAYS REQUIRED CORE

8. LIST OF COURSES, IF ANY, TO BE WITHDRAWN WHEN COURSE(S) IS (ARE) ADOPTED: NONE

9. IF COURSE IS AN INTERNSHIP OR INDEPENDENT STUDY OR THE LIKE, PROVIDE AN EXPLANATION AS TO HOW THE STUDENTS WILL EARN THE CREDITS AWARDED. THE CREDITS AWARDED SHOULD BE CONSISTENT WITH STUDENTS' EFFORTS REQUIRED IN A TRADITIONAL CLASSROOM SETTING: COURSE IS NOT PART OF AN INTERNSHIP OR INDEPENDENT STUDY

10. PROPOSED TEXT BOOK(S) AND/OR OTHER REQUIRED INSTRUCTIONAL MATERIAL(S):
TEXT: BIOLOGY FOR A CHANGING WORLD BY M. SHUSTER, J. VIGNA, G. SINHA, AND M. TONTONOZ. W H FREEMAN & CO (2011) ISBN: 0716773244

LAB: SMART SCIENCE LAB UNITS, SMART SCIENCE EDUCATION
HTTP://WWW.SMARTSCIENCE.NET/SMARTSCIENCE/SMARTSCIENCE.HTML

12. REQUIRED COURSE FOR MAJORS AND/OR AREA OF CONCENTRATION? **(If course is required, please subi a separate transmittal with a degree requirement sheet noting the proposed revisions, including wher course fits into degree requirements, and what course(s) will be removed as a requirement for the degree. NYSED guidelines of 45 crs. of Liberal Arts coursework for an A.A. degree, 30 crs. for an A.S degree and 20 crs. of Liberal Arts for an A.A.S. degree must be adhered to for all 60 cr. programs).** COURSE IS PART OF THE LIFE AND PHYSICAL SCIENCES REQUIRED COMMON CORE.

13. IF OPEN ONLY TO SELECTED STUDENTS (specify): OPEN TO ALL STUDENTS

14. EXPLAIN WHAT STUDENTS WILL KNOW AND BE ABLE TO DO UPON COMPLETION OF COURSE:
- IDENTIFY AND APPLY THE FUNDAMENTAL CONCEPTS AND METHODS OF BIOLOGY.
- APPLY THE SCIENTIFIC METHOD TO EXPLORE NATURAL PHENOMENA, INCLUDING HYPOTHESIS DEVELOPMENT, OBSERVATION, EXPERIMENTATION, MEASUREMENT, DATA ANALYSIS, AND DATA PRESENTATION.
- USE THE TOOLS OF A SCIENTIFIC DISCIPLINE TO CARRY OUT COLLABORATIVE LABORATORY INVESTIGATIONS.
- GATHER, ANALYZE, AND INTERPRET DATA AND PRESENT IT IN AN EFFECTIVE WRITTEN LABORATORY OR FIELDWORK REPORT.
- IDENTIFY AND APPLY RESEARCH ETHICS AND UNBIASED ASSESSMENT IN GATHERING AND REPORTING SCIENTIFIC DATA.

15. METHODS OF TEACHING --eg., LECTURES, LABORATORIES, AND OTHER ASSIGNMENTS FOR STUDENTS, INCLUDING ANY OF THE FOLLOWING: DEMONSTRATIONS, GROUP WORK, WEBSITE OR E-MAIL INTERACTIOI AND/OR ASSIGNMENTS, PRACTICE IN APPLICATION OF SKILLS: THIS COURSE WILL INVOLVE LECTURE, DISCUSSION, DATA COLLECTION THROUGH LABORATORY SIMULATIONS, GROUP WORK, WEBSITE ASSIGNMEI AND THE SUBMISSION OF WRITTEN REPORTS.

16. ASSIGNMENTS TO STUDENTS:

EXAMS/QUIZZES	30%
LAB REPORTS/ASSIGNMENTS	30%
CLASS WORK*	10%

FINAL PRESENTATION	10%
FINAL EXAM	20%

*CLASS WORK INCLUDES COMPLETING ONLINE ASSIGNMENTS SO THAT STUDENTS COME TO CLASS PREPARED FOR THE DAY'S DISCUSSION

17. DESCRIBE METHOD OF EVALUATING LEARNING SPECIFIED IN #15: EVALUATION WILL INVOLVE EXAMS, QUIZZES, WRITTEN REPORTS AND IN CLASS PRESENTATIONS.

18. TOPICAL COURSE OUTLINE (WHICH SHOULD BE AS SPECIFIC AS POSSIBLE REGARDING TOPICS COVERED, LEARNING ACTIVITIES AND ASSIGNMENTS): SEE PAGE 9-11 OF THIS DOCUMENT

19. SELECTED BIBLIOGRAPHY AND SOURCE MATERIALS: SEE PAGE 4 OF THIS DOCUMENT

Please contact your Department Chairperson or Associate Dean Loretta DiLorenzo at the Office of Academic Affairs x5328, if you require any assistance completing a course proposal according to this format. Copies of this format are available electronically.

BIO 1 Course Outline

WEEK	LECTURE	SCIENTIFIC INQUIRY/LAB EXPERIENCE
1	Introduction to biology Characteristics of life Life's diversity (classification: kingdoms)	Is yeast alive? (outside of class activity) Smart Science: Plants and Water
2	How is biology studied- the scientific method	Making observations (outside of class activity)- oranges, apples, bananas
3	Evolution • Principle: Darwin's observations and deductions • Evidence: o Fossil record o Comparative anatomy & physiology (form/function)	http://www.eskeletons.org/comparative.html Smart Science: Natural Selection
4	Evolution • Adaptations and extinction • Human Evolution - Did humans evolve from monkeys?	Students will go to The American Museum of Natural History: Hall of Man
5	Ecology • Principles and goals • Organization: population, community, ecosystems, biosphere and biosphere • Populations: importance of growth and size. Impact of human population on the environment • Community: interaction and symbioses	Population examination http://www.populationinstitute.org/?gclid=CJjt4vXKlq4CFUFN4Aod8CGNKQ Analysis of population data http://www.globalchange.umich.edu/globalchange2/current/lectures/human_pop/human_pop.html Smart Science: Biomes Observations on campus
6	Ecology • Ecosystem organization, trophic levels • Changes in ecosystems over time	Smart Science: Food Webs Observations on campus
7	Human impact on the Biosphere • Global warming • Pollution • Population explosion • Feeding the population • Fossil fuels • Alternative energy sources	Calculate carbon footprint Smart Science: Animal Behavior Smart Science: Seed germination with Pollutants
8	Introduction to ethics and ethics in science	Case study: http://www.bioethics.iastate.edu/classroom/case_studies.html

WEEK	LECTURE	SCIENTIFIC INQUIRY/LAB EXPERIENCE
9	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
10	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 http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/risk.htm Obesity http://www.always-health.com/risk_calculator/obesity.asp American Heart Association: "Calculate your risk for high blood pressure related risks" http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/WhyBloodPressureMatters/Assess-Your-High-Blood-Pressure-Related-Risks_UCM_301829_Article.jsp
11	Current topics in biology: Genetics • Introduction to general principles of genetics • Genetic testing • Stem cells • Gene Therapy • Human genome project • Ethical Issues	http://www.stemcellresearch.org/ http://ghr.nlm.nih.gov/handbook/therapy/genetherapy
12	Student presentations on a biological topic of interest. → The presentation needs to include: • The techniques used to study the topic • How the data are gathered and analyzed • Ethical concerns	

Resources

Why is evolution controversial anyway?
http://www.pbs.org/wgbh/evolution/educators/teachstuds/unit7.html

What is the nature of science?
http://www.pbs.org/cgi-registry/2wgbh/evolution/print_input.cgi

Evolution
http://www.bbc.co.uk/sn/prehistoric_life/human/human_evolution/food_for_thought1.shtml
http://evolution.berkeley.edu/evolibrary/article/0_0_0/evo_50

Extinction
http://www.open.edu/openlearn/nature-environment/natural-history/museum-the-dead

http://www.eskeletons.org/
http://www.eskeletons.org/comparative.html

Carbon Footprint
http://bie.berkeley.edu/node/1849

Pollution and Environmental Health Concerns
http://toxtown.nlm.nih.gov/
http://www.who.int/indoorair/en/index.html
http://www.populationinstitute.org/?gclid=CJjt4vXKlq4CFUFN4Aod8CGNKQ
http://www.globalchange.umich.edu/globalchange2/current/lectures/human_pop/human_pop.html

Bioethics
http://www.bioethics.iastate.edu/classroom/case_studies.html
http://www.sosq.vcu.edu/videos.aspx

Genetics
http://www.stemcellresearch.org/
http://ghr.nlm.nih.gov/handbook/therapy/genetherapy