CUNY Common Core
Course Submission Form

Instructions: All courses submitted for the Common Core must be liberal arts courses. Courses may be submitted for only one area of the Common Core. All courses must be 3 credits/3 hours unless the college is seeking a waiver for a 4-credit Math or Science course (after having secured approval for sufficient 3-credit/3-hour Math and Science courses). All standard governance procedures for course approval remain in place.

College	KCC
Course Number	Bio 70
Course Title	The Science of Nutrition
Department(s)	Biological Sciences
Discipline	Biology
Subject Area	Scientific World
Credits	3
Contact Hours	3
Pre-requisites	none
Catalogue Description	Increased food processing, chemical additions to food, and the great variety of available foods makes it important to understand the basic ideas of modern nutrition. Such concepts as biochemical individuality as related to nutrition for optimum health are integrated with surveys of carbohydrate, protein and fat metabolism. Also studied are the role of vitamins and minerals in metabolic processes, food selection, special diets during illness, safety of the food supply. Students analyze their own diet. This course does NOT satisfy the Biology major elective requirement
Syllabus	See pages 6-8 of this document

Waivers for 4-credit Math and Science Courses

All Common Core courses must be 3 credits and 3 hours.

Waivers for 4-credit courses will only be accepted in the required areas of Mathematical and Quantitative Reasoning and Life and Physical Sciences. Such waivers will only be approved after a sufficient number of 3-credit/3-hour math and science courses are approved for these areas.

If you would like to request a waiver please check here:	☐ Waiver requested
If waiver requested: Please provide a brief explanation for why the course will be 4 credits.	
If waiver requested: Please indicate whether this course will satisfy a major requirement, and if so, which major requirement(s) the course will fulfill.	

Indicate the status of this course being nominated:

☒ current course ☐ revision of current course ☐ a new course being proposed

CUNY COMMON CORE Location

Please check below the area of the Common Core for which the course is being submitted. (Select only one.)

Required	Flexible	
☐ English Composition	☐ World Cultures and Global Issues	☐ Individual and Society
☐ Mathematical and Quantitative Reasoning	☐ US Experience in its Diversity	☒ Scientific World
☐ Life and Physical Sciences	☐ Creative Expression	

Learning Outcomes

In the left column explain the assignments and course attributes that will address the learning outcomes in the right column.

I. Required Core (12 credits)

A. English Composition: Six credits

A course in this area must meet all the learning outcomes in the right column. A student will:

	• Read and listen critically and analytically, including identifying an argument's major assumptions and assertions and evaluating its supporting evidence.
	• Write clearly and coherently in varied, academic formats (such as formal essays, research papers, and reports) using standard English and appropriate technology to critique and improve one's own and others' texts.
	• Demonstrate research skills using appropriate technology, including gathering, evaluating, and synthesizing primary and secondary sources.
	• Support a thesis with well-reasoned arguments, and communicate persuasively across a variety of contexts, purposes, audiences, and media.
	• Formulate original ideas and relate them to the ideas of others by employing the conventions of ethical attribution and citation.

B. Mathematical and Quantitative Reasoning: Three credits

A course in this area must meet all the learning outcomes in the right column. A student will:

	• Interpret and draw appropriate inferences from quantitative representations, such as formulas, graphs, or tables.
	• Use algebraic, numerical, graphical, or statistical methods to draw accurate conclusions and solve mathematical problems.
	• Represent quantitative problems expressed in natural language in a suitable mathematical format.
	• Effectively communicate quantitative analysis or solutions to mathematical problems in written or oral form.
	• Evaluate solutions to problems for reasonableness using a variety of means, including informed estimation.
	• Apply mathematical methods to problems in other fields of study.

C. Life and Physical Sciences: Three credits A course in this area must meet all the learning outcomes in the right column. A student will:	
	• Identify and apply the fundamental concepts and methods of a life or physical science.
	• 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.
II. Flexible Core (18 credits) Six three-credit liberal arts and sciences courses, with at least one course from each of the following five areas and no more than two courses in any discipline or interdisciplinary field.	
A. World Cultures and Global Issues	
A Flexible Core course must meet the three learning outcomes in the right column.	
	• Gather, interpret, and assess information from a variety of sources and points of view.
	• Evaluate evidence and arguments critically or analytically.
	• Produce well-reasoned written or oral arguments using evidence to support conclusions.
A course in this area (II.A) must meet at least three of the additional learning outcomes in the right column. A student will:	
	• Identify and apply the fundamental concepts and methods of a discipline or interdisciplinary field exploring world cultures or global issues, including, but not limited to, anthropology, communications, cultural studies, economics, ethnic studies, foreign languages (building upon previous language acquisition), geography, history, political science, sociology, and world literature.
	• Analyze culture, globalization, or global cultural diversity, and describe an event or process from more than one point of view.
	• Analyze the historical development of one or more non-U.S. societies.
	• Analyze the significance of one or more major movements that have shaped the world's societies.
	• Analyze and discuss the role that race, ethnicity, class, gender, language, sexual orientation, belief, or other forms of social differentiation play in world cultures or societies.
	• Speak, read, and write a language other than English, and use that language to respond to cultures other than one's own.

B. U.S. Experience in its Diversity A Flexible Core course must meet the three learning outcomes in the right column.	
	• Gather, interpret, and assess information from a variety of sources and points of view.
	• Evaluate evidence and arguments critically or analytically.
	• Produce well-reasoned written or oral arguments using evidence to support conclusions.
A course in this area (II.B) must meet at least three of the additional learning outcomes in the right column. A student will:	
	• Identify and apply the fundamental concepts and methods of a discipline or interdisciplinary field exploring the U.S. experience in its diversity, including, but not limited to, anthropology, communications, cultural studies, economics, history, political science, psychology, public affairs, sociology, and U.S. literature.
	• Analyze and explain one or more major themes of U.S. history from more than one informed perspective.
	• Evaluate how indigenous populations, slavery, or immigration have shaped the development of the United States.
	• Explain and evaluate the role of the United States in international relations.
	• Identify and differentiate among the legislative, judicial, and executive branches of government and analyze their influence on the development of U.S. democracy.
	• Analyze and discuss common institutions or patterns of life in contemporary U.S. society and how they influence, or are influenced by, race, ethnicity, class, gender, sexual orientation, belief, or other forms of social differentiation.
C. Creative Expression	
A Flexible Core course must meet the three learning outcomes in the right column.	
	• Gather, interpret, and assess information from a variety of sources and points of view.
	• Evaluate evidence and arguments critically or analytically.
	• Produce well-reasoned written or oral arguments using evidence to support conclusions.
A course in this area (II.C) must meet at least three of the additional learning outcomes in the right column. A student will:	
	• Identify and apply the fundamental concepts and methods of a discipline or interdisciplinary field exploring creative expression, including, but not limited to, arts, communications, creative writing, media arts, music, and theater.
	• Analyze how arts from diverse cultures of the past serve as a foundation for those of the present, and describe the significance of works of art in the societies that created them.
	• Articulate how meaning is created in the arts or communications and how experience is interpreted and conveyed.
	• Demonstrate knowledge of the skills involved in the creative process.
	• Use appropriate technologies to conduct research and to communicate.

D. Individual and Society A Flexible Core course must meet the three learning outcomes in the right column.	
	• Gather, interpret, and assess information from a variety of sources and points of view.
	• Evaluate evidence and arguments critically or analytically.
	• Produce well-reasoned written or oral arguments using evidence to support conclusions.
A course in this area (II.D) must meet at least three of the additional learning outcomes in the right column. A student will:	
	• Identify and apply the fundamental concepts and methods of a discipline or interdisciplinary field exploring the relationship between the individual and society, including, but not limited to, anthropology, communications, cultural studies, history, journalism, philosophy, political science, psychology, public affairs, religion, and sociology.
	• Examine how an individual's place in society affects experiences, values, or choices.
	• Articulate and assess ethical views and their underlying premises.
	• Articulate ethical uses of data and other information resources to respond to problems and questions.
	• Identify and engage with local, national, or global trends or ideologies, and analyze their impact on individual or collective decision-making.
E. Scientific World A Flexible Core course must meet the three learning outcomes in the right column.	
Students will compare the latest health and nutrition recommendations such as Dietary Guidelines for Americans, My Plate and Healthy People 2020.	• Gather, interpret, and assess information from a variety of sources and points of view.
Students will be required to conduct a 3 day dietary assessment. Based on the data they gather students will determine the % RDA for various nutrients and analyze their calorie consumption as well as the factors that affected their food choices.	• Evaluate evidence and arguments critically or analytically.
Students will write reviews of articles from *The American Journal of Clinical Nutrition.* As part of this report, students are asked to analyze the data presented and determine if there are any biases or misconceptions.	• Produce well-reasoned written or oral arguments using evidence to support conclusions.
A course in this area (II.E) must meet at least three of the additional learning outcomes in the right column. A student will:	
Students will carry out the five measurements of nutrition assessment: anthropometric, biochemical, clinical, dietary, and environmental. Based on their collected data, they will determine the factors affecting	• Identify and apply the fundamental concepts and methods of a discipline or interdisciplinary field exploring the scientific world, including, but not limited to: computer science, history of science, life and physical sciences, linguistics, logic, mathematics, psychology, statistics, and technology-related studies.
Students will examine how food content is measured and analyzed. The meaning of standard terminology (eg RDA, calories, metric system measures), will be considered and then applied by students in calculations on homework and exams.	• Demonstrate how tools of science, mathematics, technology, or formal analysis can be used to analyze problems and develop solutions.
	• Articulate and evaluate the empirical evidence supporting a scientific or formal theory.
Throughout the course, students will be expected to consider the impact of food, its availability and cost on everyday life. Ethical concerns such as feeding the hungry across the world and unequal access to food will be discussed	• Articulate and evaluate the impact of technologies and scientific discoveries on the contemporary world, such as issues of personal privacy, security, or ethical responsibilities.
	• Understand the scientific principles underlying matters of policy or public concern in which science plays a role.

Kingsborough Community College of The City University of New York

Biology Department

718-368-5502

Biology 70 - The Science of Nutrition, 3 Credits/3 Hours,

Course Description

Biology 70 presents the principles of nutritional science and does not require previous science background. Biological and chemical principles are explained and applied to nutritional science as required. The course begins with an introduction to basic nutritional principles and the systems organization of the human body. Study of the anatomy and physiology of the digestive system follows. Nutrients are then considered sequentially - water, carbohydrates, lipids, protein, vitamins, and minerals. Discussions of body weight maintenance and loss, healing, common diseases, herbs, pregnancy diets, athletic nutritional needs, environmental contamination of the body, and current nutritional advertising occur in the context of each major course area. Students are encouraged to ask questions; those of general interest will be covered in class; those of a more personal nature will be deferred and answered privately.

Successful completion of the course requires passing the unit examinations, e-mail submission of a research summary, submission of an analyzed personal diet survey, and passing the final examination.

Textbook

Boyle, M.A., and Long ., Personal Nutrition, 6th edition /Wadsworth, California

Course Outcomes

Upon completion of the course, students will be able to:

1. List the steps of the scientific method, and recognize the use of the scientific method in the formulation of nutrition guidelines.
2. Ask scientifically based questions about nutrients, nutrition, and nutrition research.
3. Identify and make connections between food choices, disease, and wellness, including vitamins, minerals, water, and proper food handling.
4. Design a food consumption plan that maximizes food's benefits, and minimizes food's negative impact.
5. Demonstrate an understanding of proper age-related food choices.

Attendance Policies

Absence from 6 or more hours of class (15% of the 36 hours of the course) is grounds for the WU grade. Absence from exams earns a zero on the exam. Assignments submitted late receive partial credit.

How Your Grade is Computed

4 Examinations 15 points each = 60 (Based on lectures and text; short answer and essay)
Journal Report 10 points = 10
Diet Survey and Analysis 10 points = 10
Final Examination 20 points = 20
Total = 100 points 2

Course Outline

Week	***Topic***	***Text readings***
1 - 3	Basic Nutritional Concepts	Chapters 1, 2, and appendix Digestive System pages A1-14. Basic Biology and Chemistry
Examination #1		
4	Water	Chapter 7, pp. 200-206.
5	Carbohydrates	Chapter 3
Examination #2		
6	Lipids	Chapter 4
7	Lipids, continued	
Research summary is due week 7		
8	Proteins	Chapter 5
9	Energy and Weight Control	Chapter 9
Examination #3		
10	Vitamins	Chapter 6
Diet Analysis is due week 10		
11	Vitamins, continued	Chapter 6
	Minerals	Chapter 7, pp. 206-237.
12	Minerals, continued	Chapter 7, pp. 206-237.

Examination #4 occurs during the final week of the term

Journal Report

This report must follow the following format. All reports must come from research articles in *The American Journal of Clinical Nutrition* (in the KCC library).

1. What -Title
2. Who -Authors
3. When -Date of Publication
4. Where -What city, hospital, location in general.
5. How- Type of study: e.g., epidemiological, controlled, double blind?
6. N- Number of subjects in the study.
7. Length/Repetitions -How long did the study take to complete and was it repeated (or only done once).
8. Organism used- human, rat, insect, or microorganism?
9. Why- Conclusions. Clearly explain why the authors say the study was done. **Clearly explain their conclusions**. This is the most important part of the report and should take-up at least half a page in essay format.
10. Evaluations- How would you judge the worth of the report based on items 1-9, the knowledge you have gained in this course and your common sense?

Diet Survey and Analysis

Your instructor will give you a form on which you may record your diet and do the required analyses. If data are missing, (such as computation of the %RDA values for your particular diet), you will receive only partial credit for this report.

Final Examination

The final examination is cumulative; you must review the entire term's work.