Kingsborough Community College of The City University of New York
Department of Biological Sciences
College Now
Syllabus for BIO70: The Biology of Nutrition
3 Credits/ 3 Hours

Course Information
This course is not required for Biology majors, nor can Biology majors use this course as credit toward the biology major. BIO70 satisfies a CUNY Pathways Flexible Core: Scientific World (Group E)

Course Description
Increased food processing, chemical additions to food, and the great variety of available foods make 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, and safety of the food supply. Students analyze their own diet.

Successful completion of the course requires passing the unit examinations, submission of a journal report, an analyzed personal diet survey, and chapter activities, posting in the discussion board and passing the final examination.

The course will be taught in person. In case of school closure or you are required to quarantine, the course will be taught synchronously which at designated time and asynchronously, which give you flexibility to design your own learning schedule and will allow you to access the course materials, participate in the board discussions, and work in groups at any time that is convenient to you. You can use a computer or a tablet. You can download the google classroom app on your phone and navigate the course.

Prerequisites/co-requisites: Enrollment in the College Now Program

Meeting Day
Tuesday, Wednesday, Thursday 7:07 am - 7:57 am Room: E236

Instructor Contact information

Email: JAndraw@schools.nyc.gov

Office Hours:
Friday 3:30 am - 4:30 pm Online

Textbook:
An Introduction to Nutrition
https://www.oercommons.org/courses/an-introduction-to-nutrition-v1-0/view

Required materials:
Printed articles and writing implements.

Expectations:

It is expected that those enrolled in this course will:

- Be actively involved in discussions.
- Complete all formal requirements.
- Submit satisfactory examinations.
- Maintain satisfactory attendance (3 absences limit).
- Be on time.
- You need your google classroom account and a code that will be sent to you shortly to access google classroom. Assignments will be posted in GC.

Course Goals*:*

Upon completion of this course, the students can:

1. Develop the knowledge to select a healthy diet for now and for one's lifetime.
2. Apply the scientific method to investigate nutritional issues and evaluate food labels and claims.
3. Analyze the interactions of nutrients in the framework of the body's metabolic patterns.
4. To involve students in the study of current nutritional research efforts.
5. Analyze the influence of marketing forces on foods and supplements regarding consumer purchases.

Course Learning Outcomes:

1. Evaluate and interpret nutritional information from scientific journals, government databases, food labels and media sources, with attention to accuracy, credibility and potential bias.
2. Critically analyze nutrition research by assessing study design, sample size, variables, limitations, and the validity of nutritional claims.
3. Construct clear, evidence-based arguments about nutrition topics in written assignments and presentations, using scientific data to support dietary recommendations or critiques.
4. Apply quantitative reasoning by interpreting dietary intake data, calculating nutrient needs, analyzing food composition tables, and evaluating nutritional trends using graphs and charts.
5. Use food composition tools (such as www.myplate.gov) to determine calorie content and grams of carbohydrates, fats and proteins for specific meals or serving sizes.
6. Demonstrate understanding of core nutrition concepts including macronutrients, micronutrients, digestion, metabolism, Dietary Reference Intakes (DRIs), and the relationship between diet, health, and disease.

Civility Statement

- As an institution of higher education, Kingsborough Community College and its faculty and staff are committed to its entire student body. As such, we strive to interact with each student equitably and professionally while providing an environment of mutual respect and civility.
- In the event a student has an allegation charge brought against him/her that is a breach of the Henderson Rules to Maintain Public Order or the Campus Code of Conduct, an immediate investigation will commence followed by a conciliation conference to determine the appropriate outcome within a thirty-day period.
- The Judicial Affairs process at Kingsborough Community College is critical in providing an agenda for safety, yet simultaneously offering protection of the rights of students who may have been accused of being in violation of the Henderson Rules to Maintain Public Order and/or the Campus Code of Conduct. These rights have been afforded to each Kingsborough student under the bylaws that were established in 1969.

Academic Integrity Policy:

- To reach academic success, one needs to uphold the 5 core values of honesty, trust, fairness, respect and responsibility. Failure to do so may result in charges of academic dishonesty. Academic dishonesty is prohibited by CUNY and Kingsborough Community College and is punishable by penalties, including failing grades, suspension, and expulsion. Examples of academic dishonesty include, but are not limited to, cheating, plagiarism, internet plagiarism, obtaining unfair advantages, and falsification of records.
- Plagiarism is the intentional use of another's intellectual creations without attribution (giving credit to the author). This is theft of materials from another author and is prohibited. Determination and penalty- ranging from grade reduction to course failure - is at the discretion of individual faculty members.

Accessibility:

Access-Ability Services (AAS) serves as a liaison and resource to the KCC community regarding disability issues, promotes equal access to all KCC programs and activities, and makes every reasonable effort to provide appropriate accommodations and assistance to students with disabilities. Please contact this office if you require such accommodations and assistance. Your instructor will be glad to make the accommodations you need, but you must have documentation from the Access-Ability office for any accommodations.

Equity Statement:

In an ideal world, science would be objective. However, much of science is subjective and is historically built on a small subset of privileged voices. I acknowledge that much of scientific research and publications have been the work of white men. With that in mind, I have tried to select topics and activities that broaden the voice of science as well as consider and respect difference. However, although I have tried to address inequities in science, there may be both overt and covert biases in the materials you read during the course. Please contact me if you have any suggestions to improve the quality of the course materials. One of my teaching goals is to create a learning environment that supports a diversity of thoughts, perspectives, and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, etc.). To help accomplish this:

- I will ask you to tell me the name and/or set of pronouns you would like me to use to address you.
- I want to be a resource for you. If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to connect with me to talk about it.
- Like so many people, I am still in the process of learning about diverse perspectives and identities. I will make mistakes!

Attendance policy:

- Attendance will be taken at the start of class. Any student not present when attendance is taken will be marked *absent*. If a student arrives late to class, it is the responsibility of the student to inform the instructor at the end of class that he/she came in late. At that point, the *absence* will be changed to *late*. If a student does not inform the instructor that he/she came in late, that student remains marked as *absent* for that class.
- A grade of WU is to be assigned to students who attended a minimum of one class, completely stopped attending at any time before final exam week and did not officially withdraw.

How Your Grade is Computed

Assignment	Points
Welcome discussion forum	5
Discussion Boards/PBL/Chapter activities/Chapter summary	25
Group Activity/presentation	10
Children book/Brochure	10
3 Examination	30
Final exam	20
Total	100
Full description of each assignment will be posted on Google classroom **No credit for late discussion forum or discussion board Assignment**	

Course Outline

Week	Topic
Week 1	Introduction The basics of understanding nutrition The six classes of nutrients
Week 2	Lifestyle factors that impact the risk of chronic disease lifestyle practices associated with longevity and health Factors that influence personal food choices. The ABCs of eating for health
Week 3	The goals for building healthy eating patterns as emphasized by the Dietary Guidelines for Americans Nutrient Recommendations Characteristics of planning a healthy diet
Week 4	Tools for diet planning-My plate Food labels: How to use when making comparisons between similar products based on health goals Health claims
Week 5	The digestive system Food movement through the digestive system and the role of each organ involved in the digestion, including accessory organs
Week 6	Metabolism: Breaking down nutrients for energy Common digestive problems and strategies to prevent them.
Week 7	The carbohydrates: Sugar, starch, fiber Major food sources of carbohydrates and their roles in the body Health benefits associated with complex carbohydrates Type 1 and Type 2 diabetes, including risk factors for each
Week 8	The lipids: Fats and oils Major food sources of lipids and their roles in the body Essential Fatty acids Good cholesterol (HDL) vs bad cholesterol (LDL) Components of a heart-healthy lifestyle

Week 9	The proteins and amino acids Major food sources of proteins and their roles in the body Essential amino acids and nonessential amino acids nutritional challenges of a vegan diet and methods for developing a vegetarian eating pattern that delivers nutritional adequacy
Week 10	Weight Management Overweight and obesity, and their health consequences Effective weight-loss strategies
Week 11	Body mass index behavior modification and its role in successful weight loss Eating Disorders
Week 12	Vitamins The major roles, deficiency symptoms, and food sources for fat-soluble vitamins The major roles, deficiency symptoms, and food sources for water-soluble
Week 13	Phytochemicals, and their relevance to health Water, Minerals, and Fluid Balance
Week 14	Minerals The major roles, deficiency symptoms, and food sources for the major minerals The major roles, deficiency symptoms, and food sources for the trace minerals
Week 15	Group project presentation
Week 16	Final

Student learning objectives by chapter:

1. The Basics of Understanding Nutrition

A. List the six classes of nutrients
B. Discuss lifestyle factors that impact the risk of chronic disease
C. Describe lifestyle practices associated with longevity and health
D. Identify different factors that influence personal food choices

2. The Pursuit of a Healthy Diet

A. Describe three characteristics of planning a healthy diet.
B. Describe the purpose of each of the categories of nutrient intake values that make up the DRI for nutrients.
C. Describe three major goals for building healthy eating patterns as emphasized by the Dietary Guidelines for Americans.
D. Explain how MyPlate/the USDA Food Patterns incorporate the principles of diet planning to help consumers make healthful meal and activity choices.
E. List the information found on food labels that is useful to use when making comparisons between similar products based on health goals.

3. Anatomy for Nutrition's Sake

A. Explain how food moves through the digestive system and identify the role of each organ involved in the digestion, including accessory organs.
B. Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.
C. Identify common digestive problems and strategies to prevent them.

4. The Carbohydrates: Sugar, Starch, and Fiber

A. Describe how carbohydrates are used in the body.
B. Describe the health benefits associated with complex carbohydrates, including the two major types of dietary fibers.

C. Summarize carbohydrate digestion and explain how the body maintains a normal blood glucose level.
D. Differentiate between Type 1 and Type 2 diabetes, including risk factors for each.
E. List examples of alternative sweeteners approved for use in the diet.

5. The Lipids: Fats and Oils

A. Describe the functions of fat in the body.
B. Describe the differences among saturated fat, polyunsaturated fat, and monounsaturated fat.
C. Describe food sources and roles of phospholipids and cholesterol (LDL vs HDL).
D. Summarize fat digestion, absorption, and transport in the body.
E. Describe components of a heart-healthy lifestyle.

6. The Proteins and Amino Acids

A. Differentiate between essential amino acids and nonessential amino acids.
B. List the functions of protein in the body.
C. Summarize the steps for protein digestion and absorption in the body.
D. Explain the differences between high-quality and low-quality proteins, including food sources of each.
E. Describe the nutritional challenges of a vegan diet and methods for developing a vegetarian eating pattern that delivers nutritional adequacy.

7. The Vitamins: A Functional Approach

A. Differentiate between the water-soluble and fat-soluble vitamins.
B. Explain how antioxidants function within the body and identify major food sources of these nutrients.
C. Describe the roles of fat-soluble and water-soluble vitamins, deficiency symptoms, and list major food sources of these nutrients.
D. Describe the roles of the B vitamins in energy metabolism, and list major food sources for each of the B vitamins.
E. Define phytochemicals, discuss their relevance to health and list ways to include them in a healthy diet.

8. The Minerals and Water: A Functional Approach

A. Differentiate between the two classifications of minerals.
B. Discuss the major roles, deficiency symptoms, and food sources for the minerals needed for maintaining healthy bones and describe factors associated with the development of osteoporosis, and list strategies for prevention.
C. Identify the minerals essential for energy metabolism and list the food sources for each.
D. Identify other major roles, deficiency symptoms, and food sources of the minerals that function as electrolytes in the body.

9. Weight Management

A. Define overweight and obesity and discuss their health consequences.
B. Define energy balance and its components and discuss its relationship to weight maintenance.
C. Recognize the different factors that interact to cause obesity.
D. Identify effective weight-loss and weight-gain strategies.
E. Discuss behavior modification and its role in successful weight loss.
F. Identify the warning signs of eating disorders.