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FNES 722 EXERCISE, ENERGY BALANCE, AND BODY COMPOSITION

Bridget McFadden
bridget.mcfadden@qc.cuny.edu

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EXERCISE, ENERGY BALANCE, AND BODY COMPOSITION

FNES 722- Spring 2026
Monday, 7:15 – 9: 45 PM
Fitzgerald Gymnasium 312

Instructor Information: Bridget A. McFadden, PhD, CSCS*D
Office: Fitzgerald Gymnasium 203L
Office Hours: Mondays and Wednesdays 4:30 – 5:30, in-person or virtual by appointment
Email: bridget.mcfadden@qc.cuny.edu

Course Description: (3 credit class) This course focuses on the interrelationships between exercise energetics, energy balance, and body composition.

Course Objectives:

There are four major goals for students in this course. Each student will be expected to acquire and demonstrate knowledge in the following areas:

A. Macro- and micro- nutrient requirements and the role they play in physiological function
B. Energy expenditure and body composition assessments
C. Nutrition and exercise considerations for physique and sport
D. Ability to evaluate the scientific evidence on nutritional ergogenic aids and diets

Textbook: This class uses open-educational resources or zero-textbook-cost materials. There are no required textbooks for purchase. All materials are freely available or will be provided by the instructor.

Funded in part by the CUNY OER Initiative

Format of Class:

The class will primarily consist of in-person lectures and discussion.

Grading:

Article Critique (x2)	100 points (50 points each)
Exam 1	100 points
Exam 2	100 points
Exam 3	100 points
Final Assignment	100 points
Total	500 points

Letter grades will be assigned on the following scale:

96.5 - 100 = A+	86.5-89.4 = B+	76.5-79.4 = C+	66.5-69.4 = D+
92.5 - 96.4 = A	82.5-86.4 = B	72.5-76.4 = C	59.5-66.4 = D
89.5 - 92.4 = A-	79.5-82.4 = B-	69.5-72.4 = C-	59 ↓ = F

Exams

Exams will primarily consist of multiple-choice, multiple answer, true/false questions, and short answer based on information provided in the respective unit (there may be some overlap in information from previous units).
**** Make-up exams will only be administered if prior arrangements are agreed upon before the date of the exam. If you miss an exam without notifying me ahead of time, the grade will be a 0.

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Article Critiques
There will be two articles assigned to critique. Students should focus on summarizing the article and providing an initial critique of strengths and weaknesses of the rationale, methodological design, statistical analyses, and discussion/conclusions. The article critiques need to be submitted to the course websight (Brightspace) on the due date in a readable format. The format shall be doubled spaced, Time New Roman, size 11 font with 1-inch margins. Late assignments will have a 5-point deduction per day late. **All assignments are to be uploaded to Brightspace in a readable format.**

Final Assignment
There are countless fad diets and exercise plans in our culture. They are often promoted by celebrities and social media influencers claiming to improve weight loss, performance, sleep, energy, etc. Choose a fitness fad and provide a critique of the program using evidence-based rationale. This will include an extended literature review on the topic consisting of a minimum of **10 peer-reviewed article sources**. Format shall be doubled spaced, Time New Roman, size 11 font with 1-inch margins. The final project will be submitted to Brightspace on XXXX, at 11:59 PM EST.

- Topic proposal will be due in class on XXX

Attendance
Students are expected to attend each scheduled class meeting, to be on time, and to be prepared for each class session. If you miss a class, it is your responsibility to obtain the information that was missed.

Communication
All students are required to have an active email address and to obtain a BrightSpace account for this course. Announcements will be made through email and/or posted via BrightSpace and it would be prudent for you to check this site daily. Assignments are to be posted on BrightSpace for electronic delivery.

Withdrawals and Incompletes
It is the student's responsibility to properly process withdrawals. Students who fail to process withdrawals or who process them after the time that grade report sheets are printed, will receive a grade of F on the official grade sheet. Incomplete (I) grades will be given only in extenuating circumstances and never as a replacement for a failing or substandard grade. Any student requesting an incomplete grade must see the instructor, Dr. McFadden, for approval and for additional rules governing incomplete grades.

Required Documentation for Excused Absences
If you know you are going to be absent from class, I request that you please send me a brief e-mail to explain your absence in advance. Remember, we do not want students to attend class if they do not feel well. Generally, documentation must be submitted to the instructor within ONE WEEK of absence.

Late Assignments
Assignments submitted more than two weeks after the due date will not be accepted unless approved by the instructor. Late assignments will be penalized 5 points per day. Assignments should be submitted on the due date via Brightspace.

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Tentative Schedule*

(It is strongly recommended that students read the assigned chapters/articles before coming to class)
*Schedule is subject to change

Date	Topic	Readings (Links found on Brightspace Course Website)	Due by End of Day 11:59 PM EST
Week 1:	Introductions and Syllabus Review Macronutrients and Micronutrients*	Introduction to Carbohydrates Functions of Carbohydrates Introduction to Lipids Function of Lipids Function of Lipids p2 Function of Lipids p3 Introduction to Protein Function of Protein	
Week 2:	Macronutrients and Micronutrients*	Introduction to Vitamins Vitamins: Fat Soluble P2 Vitamins: Water Soluble P3 Antioxidants Introduction to Minerals Major Minerals Trace Minerals Dietary Reference Intakes	
Week 3:	Bioenergetics during Exercise#	Overview of Metabolic Reactions Carbohydrate Metabolism Lipid Metabolism Protein Metabolism	
Week 4:	Nutrition Metabolism*	Fuel Sources Athlete Energy Needs	**Article Critique 1 due
Week 5:	**EXAM 1**		
Week 6:	Hierarchy of Evidence * Measurements of Energy in Food and during Exercise	Types of Scientific Studies Calories Weight Management	In Class Review article critique
Week 7:	Body Composition Assessments *	Indicators of Health: Body Composition	Lab Walkthrough
Week 8:	Energy Balance, Physical Activity and Weight Control*	Factors Affecting Energy Intake Healthy Diet Considerations	
Week 9:	Energy Balance, Physical Activity and Weight Control: Exercise*	Factors Affecting Energy Expenditure MyPlate.gov Considerations	**Article Critique 2 due
Week 10:	**EXAM 2**		
Week 11:	Energy Balance, Physical Activity and Weight Control: Fad Diets	ISSN Position Stand: Diets and Body Composition (Aragon et. al, 2017)	In Class Documentary
Week 12:	Nutritional Considerations for Sport and Exercise	Position of the Academy of Nutrition and Dietetics, Dietitians of Canada, and the American College of Sports	Documentary Critique and Discussion

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		Medicine: Nutrition and Athletic Performance (2016)	
Week 13:	Physique v Sport Nutrition/REDS Nutrient Timing	2023 International Olympic Committee's (IOC) consensus statement on Relative Energy Deficiency in Sport (REDs) (Mountjoy et al. 2023) Nutrient Timing: A Garage Door of Opportunity (Arent et al. 2020)	
Week 14:	Supplements and Ergogenic Aids	IOC Consensus Statement: Dietary Supplements and the High-Performance Athlete (Maughan et al. 2018)	**Final Project due
Week 15:	**FINAL EXAM 6:15 – 8:15**		

Resources:

** Human Nutrition: 2020 Edition Authors :University of Hawai'i at Mānoa Food Science and Human Nutrition Program Available at Pressbooks.org*

[#] Anatomy and Physiology 2e (Authors: Betts et al.) Available on OpenStax.oer

Aragon et al. (2017) International society of sports nutrition position stand: diets and body composition. Journal of the International Society of Sports Nutrition (14):16. DOI 10.1186/s12970-017-0174-y

Position of the Academy of Nutrition and Dietetics, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and Athletic Performance. (2009) Medicine & Science in Sports & Exercise 41(3):p 709-731. DOI: 10.1249/MSS.0b013e31890eb86

Mountjoy, M., Ackerman, K. E., Bailey, D. M., et al. (2023). 2023 International Olympic Committee's (IOC) consensus statement on relative energy deficiency in sport (REDs). British journal of sports medicine, 57(17), 1073-1098.

Arent, S.M., Cintineo, H.P., McFadden, B.A, Chandler, A.J., & Arent, M.A. (2020) Nutrient timing: a garage door of opportunity? Nutrients, 12 (7), 1948.

Maughan, R. J., Burke, L. M., Dvorak, J., et al. (2018). IOC Consensus Statement: Dietary Supplements and the High-Performance Athlete. International Journal of Sport Nutrition and Exercise Metabolism, 28(2), 104-125. DOI: https://doi.org/10.1123/ijsnem.2018-0020

Academic Integrity

It is the responsibility of every student at Queens College to adhere steadfastly to truthfulness and to avoid dishonesty, fraud, or deceit of any type in connection with any academic program. Any student who violates this Honor Code or who knowingly assists another to violate this Honor Code shall be subject to discipline.

Academic Dishonesty is prohibited in The City University of New York and is punishable by penalties, including failing grades, suspension, and expulsion as provided at https://www.cuny.edu/about/administration/offices/legal-affairs/policies-procedures/academic-integrity-policy/. Please read this document, paying careful attention to the sections on plagiarism and Internet plagiarism. If you are not sure how to cite work you have found on the internet, please review the APA Guidelines provided by the Purdue OWL.

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This **Honor Code** is intended to prohibit all forms of academic dishonesty and should be interpreted broadly to carry out that purpose. The following examples illustrate conduct that violates this Honor Code, but this list is not intended to be an exhaustive compilation of conduct prohibited by the Honor Code:

- Giving or receiving unauthorized assistance, or attempting to give or receive such assistance, in connection with the performance of any academic work.
- Unauthorized use of materials or information of any type or the unauthorized use of any electronic or mechanical device in connection with the completion of any academic work.
- Access to the contents of any test or examination or the purchase, sale, or theft of any test or examination prior to its administration.
- Use of another person's work or ideas without proper acknowledgment of source.
- Intentional misrepresentation by word or action of any situation of fact, or intentional omission of material fact, so as to mislead any person in connection with any academic work (including, without limitation, the scheduling, completion, performance, or submission of any such work).
- Offering or giving any favor or thing of value for the purpose of influencing improperly a grade or other evaluation of a student in an academic program.
- Conduct intended to interfere with an instructor's ability to evaluate accurately a student's competency or performance in an academic program.
- Whenever a student is uncertain as to whether conduct would violate this Honor Code, it is the responsibility of the student to seek clarification from the appropriate faculty member or instructor of record prior to engaging in such conduct.

Use of Artificial Intelligence (AI) Policy:

Cheating is the unauthorized use or attempted use of material, information, notes, study aids, devices, artificial intelligence (AI) systems, or communication during an academic exercise and will result in a grade of a "0" on the assignment and may result in disciplinary action from the department/University.

Example of cheating include:

- Copying from another person or from a generative AI system or allowing others to copy work submitted for credit or a grade. This includes uploading work or submitting class assignments or exams to third party platforms and websites beyond those assigned for the class, such as commercial homework aggregators, without the proper authorization of a professor. Any use of generative AI tools must be in line with the usage policy for specific assignments as defined in the course of the syllabus and/or communicated by the course instructor.
- Using artificial intelligence tools to generate content for assignments or exams, including but not limited to language models or code generators, without written authorization from the instructor. Copying from another person or from a generative AI system or allowing others to copy work submitted for credit or a grade. This includes uploading work or submitting class assignments or exams to third party platforms and websites beyond those assigned for the class, such as commercial homework aggregators, without the proper authorization of a professor. Any use of generative AI tools must be in line with the usage policy for specific assignments as defined in the course of the syllabus and/or communicated by the course instructor.
- Submitting content generated by another person or an AI tool or any other source as solely your own work as your own, including, but not limited to, material obtained in

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whole or in part from commercial study or homework help websites, or content generated or altered by AI or digital paraphrasing tools without proper citation

Queens College Classroom Photography and Recording Policy
Neither photographs nor recordings (audio or video) of all or parts of classes at Queens College may be made without written permission from the course instructor(s).

Religious Holiday Policy
Students, upon prior notification of their instructors, shall be excused from class or other scheduled academic activity to observe a religious holy day of their faith. No major test, major class events or major university activity should be scheduled on a major religious holiday. Professors and university administration shall not penalize students who are absent from academic or social activities because of religious observance. Students shall be permitted a reasonable amount of time to make up material or activities covered in their absence.
In addition to scheduling exams, I have attempted to avoid conflicts with major religious holidays. If, however, I have inadvertently scheduled an exam or major deadline that creates a conflict with your religious observances, please let me know as soon as possible so that we can make other arrangements.

Sexual Harassment
Sexual Harassment is not permitted at Queens College. Please be aware that your statements and actions are being observed by numerous students with very diverse backgrounds. An action that may appear to be harmless in one person's opinion may be interpreted as aggressive pressure or intimidation by another individual. Any concern regarding sexual harassment should be reported to the instructor – Dr. McFadden or Dr. Ashima Kant (FNES Department Chairman).

Diversity
In order to learn, we must be open to the views of people different that ourselves. In this time, we share together over the semester, please honor the uniqueness of your fellow classmates and appreciate the opportunity we have to learn from one another. Please respect each other's opinions and refrain from personal attacks or demeaning comments of any kind. Finally, remember to keep confidential all issues of a personal or professional nature that are discussed in class.

Accommodating Disabilities
Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class: register with and provide documentation to the Special Services Office, Frese Hall, Room 111; bring a letter indicating the need for accommodation and what type. This should be done during the first week of class. For more information about services available to Queens College candidates, visit Office of Special Services (SPSV), or contact: Special Service Office; Director, Miriam Detres-Hickey, Frese Hall, Room 111; 718-997-5870 (Monday – Thursday 8:00 a.m. to 5:00 p.m. & Friday 8:00 a.m. to 4 pm.)

Student Well-Being
As a student, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. To make an appointment, students should call 718-997-5420 and leave a message with their phone number and cuny i.d. You can also e-mail counselingservices@qc.cuny.edu.QC services are available free of charge. You can learn more

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about confidential mental health services available on campus at: Counseling Services Website.

Students may experience situations or challenges that can interfere with learning and interpersonal functioning including stress, anxiety, depression, substance use, concern for a family/friend, or feelings of hopelessness. Pay attention to what is happening in the classroom and in the lives of your fellow students. There are numerous campus resources available to students. An outside resource is the National Suicide Prevention Lifeline (800-273-8255).

Use of Student Work: All programs in New York State undergo periodic reviews by accreditation agencies. For these purposes, samples of student work are occasionally made available to those professionals conducting the review. Anonymity is assured under these circumstances. If you do not wish to have your work made available for these purposes, please let the professor know before the start of the second class. Your cooperation is greatly appreciated.

Course Evaluations
During the final four weeks of the semester, you will be asked to complete an evaluation for this course by filling out an online questionnaire. Please remember to participate in these course evaluations. All responses are completely anonymous; no identifying information is retained once the evaluation has been submitted.

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