

NUTR 6320-090
Advanced Sport Nutrition
SUMMER 2021

Instructor: Katherine Beals, PhD, RD, FACSM, CSSD
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Email: katherine.beals@hsc.utah.edu
Class days/times: This course is fully online
Office hours: Phone and Zoom appointments can be made upon request
Course Website: Canvas: <https://utah.instructure.com>

Course Pre-requisites: Biochemistry, exercise physiology and at least one basic nutrition course. *In addition, you must be concurrently enrolled in Nutr 5320.*

Required Readings

- Textbook: Dunford M & Doyle JA. *Nutrition for Sport and Exercise 4rd ed.* Tomson & Wadsworth. 2018.
- Journal articles: Journal articles will be provided for students on Canvas.
- Adjunct texts: The following are excellent references to have as you embark on your education and future career in sport nutrition.
 - Beals KA. *Nutritional Needs of Female Athletes: From Research to Practice.* CRC Press. 2012.
 - Burke L and Deakin V. *Clinical Sport Nutrition.* 5th edition McGraw-Hill, 2015.
 - Karpinski C and Rosenbloom C. (eds). *Sports Nutrition: A Handbook for Professionals, 6th ed.* SCAN dietetic practice group, American Dietetic Association, 2017.
 - Manore MM, Meyer N, and Thompson J. *Sport Nutrition for Health and Performance.* Human Kinetics. Champaign, IL. 2009.

Course Description/Philosophy: This course is designed for graduate students already familiar with the basic concepts of nutrition, biochemistry and exercise physiology who are interested in exploring how these concepts relate to sports nutrition and exercise performance. The focus of the course will be on the biochemical and physiological mechanisms underlying nutrition as it relates to exercise metabolism and sports performance with the goal of answering the “why and how” nutrition and diet can help or hinder athletic performance. The ability to evaluate the science behind a nutritional approach or dietary supplement designed to enhance performance is an important tool for a sports dietitians and exercise physiologists. Students will be required to read, discuss and critique current exercise physiology and sport nutrition literature.

Course objectives: Upon successful completion of this course the student will be able to...

- describe how physical performance is dependent upon the complex interactions of exercise, training **and** nutrition.
- Identify specific nutrient needs that may be unique to individuals who engage in physical activity/sport.
- apply the basic principles of nutrition support to exercise training and athletic performance and understand how these principles work on a cellular level.
- evaluate current research issues in sports nutrition and apply this research to athlete or active individual.

Evaluation of Student Performance

****Final grades for the course will be based on the following:**

Quizzes (10 @ 10-20 pt)	160
Journal Article Presentation (2 @ 50)	100
Case Studies	120
Supplement Evaluation	80
Misc Homework Assignments	20
Class Discussion/Participation	10
Total Points Possible	500

Grading Scale

A	95-100%	C	74-76%
A-	90-94%	C-	70-73%
B+	87-89%	D+	67-69%
B	84-86%	D	64-66%
B-	80-83%	D-	60-63%
C+	77-79%	F	<60%

- **Quizzes:** There will be **ten** quizzes ranging in point value from 10- 20 points (for a total of 160 points). The quizzes are open-book and open-note and are timed.
- **Homework Assignments:** There will be a few homework assignments provided throughout the semester. All assignments are designed to provide practical experience to the students, that is the chance to apply the concepts learned in class. Specific instructions for these will be posted on Canvas under the "assignments" icon.
- **Sport Nutrition Case Studies:** Within the first few weeks of the course, students will select a fictitious athlete/active individual that will serve as their "case study" for the remainder of the semester. Students will have a number of assignments throughout the semester pertaining to the case study. Specific instructions for these will be posted on Canvas under the "assignments" icon.
- **Supplement Evaluation:** Students will choose a popular dietary supplement, scientifically evaluate the ingredients contained within it and provide a cost:benefit analysis and recommendations. Specific instructions for this assignment will be posted on Canvas under the "assignments" icon.
- **Journal Article Presentation/Discussion:** Each student will be required to present a summary and critique of **two** articles of his/her choice (via a Zoom presentation/discussion). Your critique should include: the originality of the research question, the methodology used in the study, the significant findings and any limitations of the study, and how the findings can be *applied* to the athlete or sport setting. Your classmates will be expected to join in the discussion, agreeing or disagreeing with your critique and offering their opinion of the scientific merit of the research.
- **Class Participation/Discussion:** Although attendance will not be taken, students are expected to log in to Canvas regularly and participate in the class discussions (online and vitural).

Make-up Policy

- It is the student's responsibility to obtain missed class information (notes, assignments, etc) from classmates.
- Assignments are due on the due dates as noted on the assignment instructions or as designated by the instructor. Late projects (≤ 1 week late) will automatically receive 1/2 credit. Assignments turned in **> 1 week late WILL NOT RECEIVE CREDIT!**
- No make-up quizzes will be given without previous arrangements with the instructor or **Examples of unusual circumstances include a death in the family or illness that requires medical treatment (documentation will be requested). Computer and/or printer error on the day an assignment is due is NOT considered an unusual circumstance. Students**

are NOT encouraged to rely upon the College of Health Computer Center for printing assignments on the day they are due because of frequent virus- related problems encountered in the past. University-sponsored trips and/or functions ARE considered excused absences that require advanced notice to the instructor.

Additional Course Policies/Information

- Lecture notes and assigned readings will be available on Canvas under the Modules tab.
- Students are responsible for knowing the registration, drop and withdrawal dates for the semester.
- The Code of Student Rights and Responsibilities is provided in detail on the University of Utah web page (www.admin.utah.edu/ppmanual/8/8-10.html). Students have specific rights in the classroom as detailed in the code. The code also specifies proscribed conduct that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully to become aware of these issues. Students may receive sanctions for violating one or more of these proscriptions. The instructor of this course will enforce the Code in the course; cheating and plagiarism will result in appropriate penalties, such as a failing grade on a specific exam or in the course and/or expulsion from the course. Students have the right to appeal such action to the Student Behavior Committee.

University Policies and Procedures

1. ***The Americans with Disabilities Act.*** The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability & Access (CDA; <http://disability.utah.edu/>; 162 Olpin Union Building; 801-581-5020). CDA will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the CDA.
2. ***University Safety Statement.*** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.
3. ***Addressing Sexual Misconduct.*** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student

Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

4. **The Code of Student Rights and Responsibilities.** The code, which specifies student rights as well as conduct involving cheating, plagiarism, collusion, fraud, theft, etc., is provided at <http://regulations.utah.edu/academics/6-400.php>.
5. **Wellness Statement.** Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness, <http://wellness.utah.edu/>; 801-581-7776.
6. **Drop/Withdrawal.** <https://registrar.utah.edu/academic-calendars/> The last day to drop (delete) classes is [date]; the last day to withdraw from this class is [date]. Please check the academic calendar for more information pertaining to dropping and withdrawing from a course. Withdrawing from a course and other matters of registration are the student's responsibility.
7. **Veterans Center.** If you are a student veteran, I want you to know that the U of Utah has a Veterans Support Center on campus. They are located in Room 418 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu/>. Please also let me know if you need any additional support in this class for any reason.
8. **LGBT Resource Center.** If you are a member of the LGBTQ community, I want you to know that my classroom is a safe environment. Additionally, please know that the U of Utah has an LGBT Resource Center on campus. They are located in Room 409 in the Olpin Union Building; their hours are M-F 8-5 pm. You can visit their website to find more information about the support they can offer, a list of events through the center and links to additional resources: <http://lgbt.utah.edu/>. Please also let me know if there is any additional support you need in this class.
9. **Learners of English as an Additional/Second Language.** If you are an English language learner, please be aware of several resources on campus that will support you with your language development and writing. These resources include: the Writing Center (<http://writingcenter.utah.edu/>); the Writing Program (<http://writing-program.utah.edu/>); the English Language Institute (<http://continue.utah.edu/eli/>). Please let me know if there is any additional support you would like to discuss for this class.

Tentative Class Schedule

Week of...	Topic	Readings
May 17	Introduction/Course Overview <ul style="list-style-type: none"> ○ Introduction to the course and the field of sports nutrition ○ Explanation of projects and journal article presentations Methods for standardizing dietary intake before performance testing	D&D Chapter 1 (pp.1-8) Assigned journal articles
May 24	Nutrition Assessment and Education in Athletes <ul style="list-style-type: none"> ○ Tools of the trade 	D&D Chapter 1 (pp. 8-16) Assigned journal articles
May 31	Energy Metabolism & Substrate Utilization <ul style="list-style-type: none"> ○ Gender differences in substrate utilization—What does it mean in terms of sport nutrition recommendations? 	D&D Chapter 2 (pp. 37-47) & Chapter 3 Assigned journal articles
June 7	Carbohydrates & Exercise <ul style="list-style-type: none"> ○ What is CHO availability and how can we maximize it? 	D&D Chapter 4 Assigned journal articles
June 14	Lipids & Exercise <ul style="list-style-type: none"> ○ High-fat/ketogenic diets: Are they ergogenic or ergolytic? 	D&D Chapter 6 Assigned journal articles
June 21	Protein & Exercise <ul style="list-style-type: none"> ○ Plant vs animal proteins- can athletes perform well on a plant-based diet? 	D&D Chapter 5 Assigned journal articles
June 28	Fluid & Electrolyte Balance <ul style="list-style-type: none"> ○ What causes muscle cramps and can they be prevented nutritionally? 	D&D Chapter 7 Assigned journal articles
July 5	Energy Balance & Weight Management in Athletes <ul style="list-style-type: none"> ○ Intermittent fasting: ergogenic or ergolytic? 	D&D Chapter 2 (pp. 47-66) Chapter 11 & 12 (pp 472-479) Assigned journal articles
July 12	Dietary Supplements <ul style="list-style-type: none"> ○ Methods of evaluating dietary supplements 	D&D Chapter 1 (pp. 17-33) & Chapter 10 (pp.386-394) Assigned journal articles
July 19	Antioxidants & Exercise <ul style="list-style-type: none"> ○ Beneficial or harmful to training adaptations & performance? 	D&D Chapter 8 Assigned journal articles
July 26	B vitamins, Vitamin D and Exercise <ul style="list-style-type: none"> ○ Are athletes at increased risk for vitamin D deficiency and can supplementation improve performance? 	D&D Chapter 8 Assigned journal articles
Aug 2	Minerals & Exercise <ul style="list-style-type: none"> ○ Magnesium status and supplementation in athletes 	D&D Chapter 9 Assigned journal articles

* D&D = Dunford and Doyle (your textbook)