**KINE 8970 (Special Topics): Nutrient Timing**

**Course Instructor: Michael D. Roberts, PhD**

Days: T, R

Time: 3:30 PM – 4:45 PM

Room: Student ACT, room 249

Office hours: email me at mdr0024@auburn.edu to set up an appointment

**Optional Text**: Nutrient Timing (2011, CRC Press; Edited by Chad Kerksick)



**Other reading materials (will be provided by the instructor)**:

* Online notes (CANVAS)
* Review articles from peer-reviewed scientific journals discussing current-day nutrition strategies for athletes (e.g., ketogenic dieting for ultra-endurance athletes, intermittent fasting, etc.) (provided on CANVAS as well)

**Course overview**:

This course will discuss how Nutrient Timing is important for optimizing endurance- or resistance training adaptations. Areas that will be covered will include protein supplementation, carbohydrate supplementation, dietary fat intake for athlete nutritional support, and the efficacy of sports supplements. Additionally, newer areas of sports nutrition research will be discussed including factors that affect the gut microbiome.

**Course Objectives:**

After completing this class, students should have a greater appreciation of how the diet and the types of foods that athletes consume can interact with sports performance.

Likewise, the student should have obtained the skills to develop a systematic approach to nutritional periodization programing.

**Semester Grading Rubric:**

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| --- | --- |
| **Assignment** | **Percent of grade** |
| **Test 1** | **20** |
| **Test 2** | **20** |
| **Test 3** | **20** |
| **Group project** | **20** |
| **Final exam (cumulative)** | **20** |

**Grading Scale:**

|  |  |
| --- | --- |
| **Letter Grade** | **Percent Scale** |
| A | 90-100 |
| B | 80-89 |
| C | 70-79 |
| D | 60-69 |
| F | <60 |

**Attendance and Late-work Policies:** If a student were to miss a class due to a foreseen circumstance (e.g., wedding, funeral, etc.), then make-up exams can be re-scheduled ahead of time with the professor. For unforeseen circumstances (slept late, flat tire, etc.), tests can be made up with a 20% penalty.

**Disability and other accommodations**

If you have not established learning accommodations through the Program for Students with Disabilities (PSD) office (1228 Haley Center, 844-2096), please contact me as soon as possible if accommodations need to be made due to learning and/or other disabilities.

Also, please contact me for accommodations for class projects using MS word, PowerPoint, etc.

Finally, let me know if you have pertinent medical information that you need to share with me (e.g., cannot participate in weight-lifting laboratories due to prior injury, etc.).

**Academic integrity policy**: students must adhere to the student academic honesty code Title XII found on the University Policies Page (<http://www.business.auburn.edu/~yostkev/teaching/finc3610/images/SGAHonorCode.pdf>)

**Additional Notes:** while unlikely, note that the instructor reserves the right to modify this course syllabus at any time. However, students will receive verbal notification of such modification.

**Class schedule (most updated, modified 8-20-17)**:

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| --- | --- |
| **Day** | **Topic** |
| T, Aug 21 | Syllabus and intro; entry-level test |
| R, Aug 23 | Muscle physiology in the context of nutrient timing (bioenergetics) |
| T, Aug 28 | Muscle physiology in the context of nutrient timing (bioenergetics) |
| R, Aug 30 | Muscle physiology in the context of nutrient timing (nutrient transporters) |
| T, Sept 4 | Muscle physiology in the context of nutrient timing (degradation versus synthesis) |
| R, Sept 6 | **No class (IPE conference)** |
| T, Sept 11 | Muscle physiology in the context of nutrient timing (degradation versus synthesis) |
| R, Sept 13 | Gut physiology (digestion) |
| T, Sept 18 | **TEST 1** |
| R, Sept 20 | Amino acids, and dietary protein background (protein quality) |
| T, Sept 25 | Protein timing for the strength athlete (both timing and total amount) |
| R, Sept 27 | **Doc at conference; online articles with MS Word assignment** |
| T, Oct 2 | **Doc at conference; online articles with MS Word assignment** |
| R, Oct 4 | Protein timing for the strength athlete (both timing and total amount) |
| T, Oct 9 | Protein timing for the endurance athlete (both timing and total amount) |
| R, Oct 11 | **Fall break** |
| T, Oct 16 | **No class (Dr. Roberts at a conference)** |
| R, Oct 18 | **TEST 2** |
| T, Oct 23 | CHO background and CHO timing for the strength and endurance athlete (both timing and total amount) |
| R, Oct 24 | **No class (Dr. Roberts at a conference)** |
| T, Oct 30 | Low-carbohydrate/high-fat diet athletes  |
| R, Nov 1 | **No class (Dr. Roberts at a conference)** |
| T, Nov 6 | Dietary fat recommendations for the athlete |
| R, Nov 8 | **TEST 3** |
| T, Nov 13 | Nutritional supplements for the endurance athlete |
| R, Nov 15 | Nutritional supplements for the strength athlete |
| T, Nov 20 | Micronutrients for athletes |
| R. Nov 22 | Gut microbiome and sports performance |
| T, Nov 27 | **Thanksgiving Break (no class)** |
| R, Nov 29 | **Thanksgiving Break (no class)** |
| T, Dec 4 | Systematic approach to nutritional periodization |
| R, Dec 6 | Group presentations |
| M, Dec 10 | **Final exam, cumulative (4:00-6:30 PM)** |

**Group project**:

Students will form groups of 3, and give a PowerPoint presentation on how they would approach nutrient timing if given a case-study example. For instance, one project would involve a strength training athlete that only eats XXX g protein for breakfast, skips lunch, and eats XXX protein for dinner. These students would be required to use scientific-based studies in order to prescribe this athlete practical recommendations in order to potentially optimize his/her performance.