

**York University**  
School of Kinesiology and Health Science

**KINE 4130 3.0**  
**Advanced Human Nutrition**  
**Fall 2016**  
**Tentative COURSE OUTLINE**

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**INSTRUCTOR**

Olasunkanmi Adegoke, PhD  
223 Lumbers /362 Bethune College  
Extension: 20887  
Email: [KINE4130@yorku.ca](mailto:KINE4130@yorku.ca)  
Office hours: by appointment

**Check the Moodle site for current and useful course info, as well info about relevant research and scholarship info.**

**TEACHING ASSISTANT**

Brendan Beatty  
Lumbers 223  
Office hours: TBA

**PREREQUISITE**

HH/KINE 4020 3.0 Human Nutrition

**TIME AND LOCATION:**

Location: CC108  
Day of the week: Monday and Wednesday  
Time: 10 am – 11:30 am

First class: Thursday September 8, 2016  
Last class: Thursday Dec 1, 2016  
No classes October 27-30, 2016 (Fall Reading days)

**INSTRUCTORS' STATEMENT**

This advanced nutrition course builds on the basic nutrition information acquired in HH/KINE 4020 3.00. It is designed to provide an in depth analysis of the pathways that integrate the metabolism of carbohydrates, protein and fat. It also investigates the role of nutrition in the development and exacerbation of chronic diseases, and under different exercise states. It is targeted towards students interested in nutrition/physiology-related careers. Assumption is made that students are already familiar with basic concepts in nutrition, physiology and biochemistry.

**COURSE DESCRIPTION**

KINE 4130 investigates the metabolic, biochemical and physiological processes related to nutrition from the cellular to the whole-body. It will address in detail the metabolic fates of carbohydrate, protein and lipid metabolism in vivo, and their inter-relatedness. It also examines iron metabolism especially in

athletes. Special consideration will be given to the metabolic interactions that exist among these macronutrients and the implications for health, altered nutritional states, exercise, and disease.

### **COURSE LEARNING OBJECTIVES**

- 1) Brief statement of the purpose of the Course. The course will help students develop an integrated understanding of how various macronutrients and micronutrients (iron) are metabolized and used by the different tissues in the body. Students will understand the fact that the way the body uses nutrients is determined by the level of availability of the different macronutrients and the specific needs of the different tissues. Because the course also incorporates group presentations of current scientific articles, students will learn to work in groups, read and critique design of nutrition experiments, and give power point presentations. In preparing for the presentations, students will work closely with the TA and the instructor.
- 2) Brief list of specific learning objectives: the course will
  - a. Present students with, and stimulate a critical thinking in, integrative analysis of metabolism of macronutrients (carbohydrate, protein, and lipids) and micronutrients. It will help them appreciate the complex interaction between macronutrient availability, tissue specific metabolism, and physiological state of the individual.
  - b. Specifically, it will help students develop an understanding and an appreciation of how macronutrients are utilized during physical activities, and how some diseases affect nutrient metabolism and utilization.
  - c. Facilitate and promote the development of inter-personal skills, through the assigned group readings and presentations. These will also facilitate student-driven learning activities.
  - d. Allow students to develop abilities to examine and critique the steps involved in nutrition related research, such as experimental design, subject selection, decision as to statistical analyses, data presentation and interpretation.
  - e. Students develop skills in giving short oral scientific presentations, and respond to audience questions.
  - f. Help students make informed decisions about choice of and timing of nutrient consumption before, during and after physical activities.

### **COURSE STRUCTURE**

- Lectures: Class notes will be available for download on Moodle.
- Group power point presentations and written reports coordinated by the instructor and TA. Students will discuss published scientific articles. They will be required to present a PowerPoint presentation to their peers and to submit a summary of their presentations.

### **REQUIRED TEXTBOOK**

Gropper SS, and Smith JL. **Advanced Nutrition and Human Metabolism**. 6<sup>th</sup> Edition. Wadsworth, Cengage Learning. Belmont, CA, USA, 2012. ISBN-13: 978-1-133-10405-6 (**QP 141 G76 2013**). The 5<sup>th</sup> edition too is good (**QP 141 G76 2009**).

### **COURSE CONTENT**

Overview of Nutrition and Digestive System: Selected Topics

Chapter 1 & 2

Nutrition and Metabolism of Carbohydrates	Chapter 3
Fiber in Nutrition and Health	Chapter 4
Nutrition and Metabolism of Lipids	Chapter 5
Nutrition and Metabolism of Protein and Amino acids	Chapter 6
Nutrition and Metabolism of Micronutrient: Iron	Chapter 13
Integration and Regulation of Metabolism and The Impact of Physical Activity	Chapter 7
Body Composition, Energy Expenditure, and Energy Balance	Chapter 8

### **EVALUATION**

Midterm	30%
Power Point Presentation (Group Assignment)	20%
Final exam (cumulative)	50%

### **MIDTERMS AND FINAL EXAM**

The Midterm and Power Presentations will be held on the following days during regular class hours. The Midterm will **include multiple choice, short answers, fill-in-the-blanks, matching, true-or-false, and/or short essays.**

#### **Midterm 1:**

- Tuesday October 18, 2016
- Includes material covered in class up to and including October 13, 2016 (inclusive).

#### **\*Power point presentations: groups and presentation dates**

- Groups #1-5: Thursday, Nov 3, 2016
- Groups #6-10: Tuesday Nov 8, 2016
- Groups #11-15: Thursday Nov 10, 2016
- \*Groups #16-20: Thursday Nov 15, 2016 \*(if required)
  
- Presentations are 15 minutes long.
- **Student attendance is mandatory**

\*Assignment into groups will be random. Number of groups and number of students per group will depend on final course enrollment. Assignment into groups along with paper articles will be done by the week of Tuesday October 11, 2016.

#### **Final Exam (cumulative):** during York U official final exam period

- Cumulative, including all topics covered in the course and up to two of the papers presented by students.

**MAKE-UP: If you missed the midterm, you would have only one opportunity for a make-up exam, at a date, time and location to be determined by the instructor. The make-up will cover the same materials as the midterm.**

If, for any reason (medical or other), students fail to write the Midterm or the make-up, the weight of the exam will be added to that of the Final Exam.

**PLEASE NOTE:** No documentation is required if you plan to miss the midterm, but you must let the instructor know no later than Thursday October 13, 2016. *If you fail to let us know and do not show up for the midterm, the maximum weight of the midterm in the calculation of your course grade will be 27%; that is, **there is a 3% penalty.***

*If you will not write the make-up, you must let the instructor know at least 4 days before the date of the make-up. If you fail to let us know and do not show up for the make-up, the maximum weight of the midterm/make-up in the calculation of your course grade will be 25%; that is, **there is a 5% penalty.***

**DEFERRED FINAL EXAM:**

If you do not write the Final Exam or midterm make-up exam, you will have to write a **Deferred Exam AFTER** York U's official fall term final exam period. To be eligible to sit for the Deferred Exam, students are required to:

- 1- provide adequate documentation (doctor's note, other proper documentation, etc.) and
- 2- complete the Deferred Exam Form ([http://www.registrar.yorku.ca/pdf/deferred\\_standing\\_agreement.pdf](http://www.registrar.yorku.ca/pdf/deferred_standing_agreement.pdf))

The **Deferred Exam will be cumulative and cover the same materials as the final exam.** Its weight will be equivalent to the cumulative weight of the Final Exam (and Midterm, if applicable).

**FURTHER INFO ABOUT THE ASSIGNMENT**

**Worth 20% of course grade:**

Students will work in groups of 2-3, depending on the course enrolment. **Assignment to groups and dates of presentations will be random.** Students will be assigned specific published scientific articles to present to their peers. The published articles and groups will be selected by the instructor and TA.

For the purpose of the students' seminar presentations, the class will be divided into 2 or more sets of presentations. Students need to respect the following timeline:

Group	Articles assigned to students	Students may meet with the TA to discuss their presentations.	Submit hard copies of presentation and 2-page summary <u>to instructor</u> . A copy of both should also be <u>emailed to instructor and TA</u>	Podium Presentation during class
#1-5	Oct 11, 2016	Till Nov 1, 2016	Nov 1, 2016	Nov 3, 2016
#6-10		As above	Nov 3, 2016	Nov 8, 2016
#11-15 #16-20		As above	Nov 8, 2016: Groups #11-15 Nov 10, 2016: Groups #16-20	Nov 10 Nov 15

Group grades for the assignment will be based on:

- a) Strict compliance with the instructions relating to the assignments
- b) Presentation: Quality and clarity of the presentation, organization of materials, **background preparation**, ability to work together as a group, ability to manage time well and to answer questions.
- c) Final individual grade will also reflect attendances (worth 2%) and individual contributions to group efforts (3%).

For further details/guidelines on presentation structure, please see below for the section entitled “PowerPoint Presentation Outline”.

### **PowerPoint Presentation Outline**

**Feel free to modify the outline to accommodate different subjects/approaches, but the salient points of the outline should be retained.**

- Students will work *in groups of 2-3* for this assignment (depending on the # of students enrolled in the course).
- Each group will give a 15-minute (maximum) seminar on an article published in a peer-reviewed scientific journal in the last 2-3 years.

Recommendation: 12-minute presentation; 3 minute for questions and answers.

Because you will be graded on your ability to answer questions posed by the class, your group will **lose marks** if you do not allow time for questions

- Use PowerPoint or similar program.
- Students will generate a 2-page summary (double spaced, font size not less than 12) of what they will present. Follow the presentation outline below. **This handout MUST be submitted to the instructor by the date indicated in the table above. A copy must also be emailed to both the instructor and TA by the date indicated**
- In addition to submitting a hard copy of presentation and summary to the instructor, students are required to submit their final PowerPoint presentation to the instructor **and** TA by email.  
On the date of presentation, a designated member of each group must arrive early to upload the presentation unto the computer.  
**You will lose the allotted time and / opportunity to present if you do not arrive on time.**

### **POWERPOINT PRESENTATION OUTLINE**

#### ***I. Introduction (1-2 min)***

- Background information needed to understand the topic
- What is the nature of the diet/nutrition intervention?
- If it is a supplement, is it synthesized by the body? Where? Which organ/tissue?
- What metabolic pathways are involved?
- Are there any mechanisms we need to understand?

- Any historical use/practice?
- Refer to some past literature on the same topic.

## **II. Rationale (0.5 min)**

- Present the rationale for undertaking the study. Why was the study undertaken?
- Refer to current gaps in the literature and how this research project addresses these gaps.

## **III. Objective(s) (0.5 min)**

- What is (are) the main objective(s) of the study?
- What is (are) the question(s) the authors are trying to answer?
- What is (are) the treatment(s) and what are the outcome measures?
- Usually, the above information is included in 1 or 2 sentences.

## **IV. Hypothesis(es) (0.5 min)**

- What did the authors hypothesize about the results?
- Any hypothesis you could generate based on the literature?

## **V. Methods (1-2 min)**

- Subject characteristics. Point out differences between the groups.
- Inclusion/exclusion criteria.
  - Study protocol/design.
  - Testing protocol.
- What are the biomarkers measured and why did the authors choose these particular ones?
- Sample analysis/method of analysis. Please be very brief when explaining methodology.
  - Calculations and statistical analysis used.

## **VI. Results (3-4 min)**

- What were the main findings? Figures and/or tables are more expressive and more powerful in conveying the message than text. But if complex tables are used, try summarizing the main points in a figure or derived table
- What are the important points we should remember?
- Any discrepancies in the data? Use the scientific literature to bolster your point.
- Attempt to explain why such a discrepancy would occur.
- What is (are) the physiologic/biochemical/cellular mechanisms or pathways involved?

## **VII. Discussion (2-3 min)**

- Summarize the main findings.
- Given what you have presented, where are we at in our current state of knowledge?
- Come back to important points and emphasize mechanisms/pathways.
- What are the criticisms, if any, that may invalidate the authors' claims?
- Did the article advance science or our knowledge of the field? How?
- You can present your critique of the article in this section.
- Mention the importance of the article and the article's strong points.
- Use the scientific literature to bolster your point.
- If you have concerns, explain what you would have expected to find according to the design in the article.
- Explain why you expect the results to be different. Refer back to biochemical/cellular/physiological processes/pathways to corroborate your point.

### **VIII. Conclusion (0.5 min)**

- Present a conclusive statement(s) that represents the data in this study.
- What is the bottom line that should be remembered from this article? **VERY IMPORTANT**

### **IX. Referencing**

- In PowerPoint, you should cite the references at the bottom right of the slide *if it applies to the whole slide*.
- If you need to cite *a few references in one slide*, then references should appear immediately after each sentence/paragraph, preferably bottom right.
- References should appear in smaller fonts than regular text, in parentheses, preferably italicized.
- You should cite the references using last name of the first author (and “et al” if more than 2 authors; both authors if only 2 authors), abbreviated journal title and year of publication.

For example: ‘Burke DB, Sliver S, Holt LE, Smith-Palmer T, Culligan CJ, Chilibeck PD. The effect of continuous low dose creatine supplementation on force, power, and total work. *Int J Sports Nutr Exerc Metab* 2000;10:235-44’ should be referenced as ‘(Burke et al, *Int J Sports Nutr Exerc Metab* 2000;10:235-244)’

### **MOODLE**

This course is found on Moodle under HH/KINE 4130 Advanced Human Nutrition. Log in with your Passport York info at <https://moodle.yorku.ca>

### **ACADEMIC HONESTY**

The following is an excerpt from York University’s Senate Policy on Academic Honesty:

“Academic honesty requires that persons do not falsely claim credit for the ideas, writing or other intellectual property of others, either by presenting such works as their own or through impersonation. Similarly, academic honesty requires that persons do not cheat (attempt to gain an improper advantage in an academic evaluation), nor attempt or actually alter, suppress, falsify or fabricate any research data or results, official academic record, application or document.”

For more information, please access the following website:

<http://www.yorku.ca/secretariat/policies/document.php?document=69>

### **STUDENT CODE OF CONDUCT**

Students are reminded that they should be polite, courteous and civil during their interactions with the course instructor, TA and other students. No abuse, aggression, harassment, intimidation, threats or assault will be tolerated, be it verbal or otherwise. This includes soliciting or “pushing” the instructor or TA for a higher grade.

The following is an excerpt from the Student Code of Conduct, specifically sections 4a and 4b:

“The following behaviours are prohibited. This list is not exhaustive but provides examples of breaches of the standard of conduct. This Code deliberately does not place violations in a hierarchy. The University views all complaints made under the provisions of this Code as serious.

- a. Breaking federal, provincial or municipal law, such as: breaking into University premises; vandalism; trespassing; unauthorized use of keys to space on campus; unauthorized possession or

use of firearms, explosives, or incendiary devices; possession or consumption of, or dealing in, illegal drugs; smoking of legal substances outside designated areas; cruelty to animals; theft of University or private property including intellectual property; unauthorized copying of documents; possession of stolen property.

- b. Threats of harm, or actual harm, to a person's physical or mental wellbeing, such as: assault; verbal and non-verbal aggression; physical abuse; verbal abuse; intimidation; sexual assault; harassment; stalking; hazing."

For the complete Student Code of Conduct and for more details, please access the following website: <http://www.yorku.ca/oscr/pdfs/CodeofRightsandResponsibilities.pdf>

### **POLICY REGARDING ACADEMIC ACCOMMODATION FOR STUDENTS WITH DISABILITIES**

The following is the Policy Statement as approved by the Senate on 1991/06 and revised 2005/02/24:

"York University shall make reasonable and appropriate accommodations and adaptations in order to promote the ability of students with disabilities to fulfill the academic requirements of their programs.

The nature and extent of accommodations shall be consistent with and supportive of the integrity of the curriculum and of the academic standards of programs or courses.

Provided that students have given sufficient notice about their accommodation needs, instructors shall take reasonable steps to accommodate these needs in a manner consistent with the guidelines established hereunder.

'Disabilities' shall be defined as those conditions so designated under the Ontario Human Rights Code in force from time to time, and will in any event include physical, medical, learning, and psychiatric disabilities."

For more information, please access the following website:

<http://www.yorku.ca/secretariat/policies/document.php?document=68>

### **IMPORTANT COURSE INFORMATION FOR STUDENTS**

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Curriculum & Academic Standards webpage (CCAS) (see Reports, Initiatives, Documents) [http://www.yorku.ca/secretariat/senate\\_cte\\_main\\_pages/ccas.htm](http://www.yorku.ca/secretariat/senate_cte_main_pages/ccas.htm)

- York's Academic Honesty Policy and Procedures/Academic Integrity Website
- Ethics Review Process for research involving human participants
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
- Student Conduct Standards
- Religious Observance Accommodation