

York University
School of Kinesiology and Health Science

KINE 4130 3.0
Advanced Human Nutrition
Fall 2021
COURSE OUTLINE

LAND ACKNOWLEDGMENT:

“York University acknowledges its presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, the Wendat, and the Métis. It is now home to many Indigenous Peoples. We acknowledge the current treaty holders and the Mississaugas of the Credit First Nation. This territory is subject of the Dish With One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region.”

INSTRUCTOR

Olasunkanmi Adegoke, PhD

223 Lumbers

Extension: 20887

Office hours: after 1 pm Tuesday (by appointment; virtually)

Email: KINE4130@yorku.ca

For emails, ensure ‘**KINE 4130**’ appears on the subject line. **Don’t send blank emails**, even if you have an attachment. **Ensure appropriate email etiquette**: for example, I will not respond to an email that has this kind of content:

‘hey prof, can i meet with u tmrw? Respond asap.’

Check the eClass site for current and useful course info, as well info about relevant research and scholarship info (<https://eclass.yorku.ca/eclass/course/view.php?id=50694>).

PREREQUISITE

HH/KINE 4020 3.0 Human Nutrition

TIME AND LOCATION:

PLEASE NOTE: Course is planned for in person delivery. A few lectures may also be delivered asynchronously. However, COVID-19 related government directives and attendant YorkU instructions may lead to changes to the mode of delivery. Such changes will be communicated to students via eClass.

Day and Location: **Tuesday (DB 0014)**
Thursday (HNE 038)

Time: 10 am – 11:30 am

When STIPULATED, by ZOOM:

<https://yorku.zoom.us/j/92557038825?pwd=MnhRN3VJR0FicXJLRlJKTUZpbnMjQZz09>

First class: Thursday September 9, 2021
 Last class: Tuesday December 7, 2021
 Fall Reading Week (No classes): October 9-15, 2021

Technical requirements for taking the course:

If lectures and other course activities are delivered remotely, several platforms will be used (e.g., eClass, Zoom, etc.) through which students will interact with the course materials, the course director / TA, as well as with one another.

Please NOTE:

- Zoom is hosted on servers in the U.S. This includes recordings done through Zoom.
- If you have privacy concerns about your data, provide only your first name or a nickname when you join a session.
- The system is configured in a way that all participants are automatically notified when a session is being recorded. In other words, a session cannot be recorded without you knowing about it.

Technology requirements and FAQs for Moodle can be found here -
<http://www.yorku.ca/moodle/students/faq/index.html>

When lectures/course activities are delivered remotely, while it is preferred, students are not obliged to have their cameras on. This also applies during seminars, EXCEPT for the presenters/speakers who MUST have their cameras on. Cameras MUST be turned if exams are online. For these activities, in addition to a stable, higher-speed Internet connection, you will need a computer with webcam and microphone, and/or a smart device with these features.

Useful links describing computing information, resources and help for students:

<u>Student Guide to Moodle</u>	https://lthelp.yorku.ca/student-guide-to-moodle
<u>Computing for Students Website</u>	https://student.computing.yorku.ca/
<u>Student Guide to eLearning at York University</u>	http://elearning-guide.apps01.yorku.ca/
<u>Learning Skills Services</u>	https://lss.info.yorku.ca/online-learning/
<u>Zoom@YorkU User Reference Guide</u>	http://staff.computing.yorku.ca/wp-content/uploads/sites/3/2012/02/Zoom@YorkU-User-Reference-Guide.pdf
<u>Zoom@YorkU Best Practices</u>	https://staff.computing.yorku.ca/wp-content/uploads/sites/3/2020/03/Zoom@YorkU-Best-Practicesv2.pdf

INSTRUCTORS' STATEMENT

This advanced nutrition course builds on the basic nutrition concepts taught in HH/KINE 4020. 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.

Although majority of course lectures will be delivered in-person, there may be a need to use Zoom lectures. For that reason, please note the following.

LEARNING VIRTUALLY (ZOOM CLASSROOMS): Things to bear in mind:

1. You will need a passport York account (usually your email address: X@yorku.ca) for authentication. If you do not have one, please contact askit@yorku.ca to have one set up for you.
2. Ensure your Zoom Application is up to date.
3. Have a dedicated, (if possible) secluded 'zoom lecture' room, relatively free of traffic/distractions/noise
4. Consider using Zoom Virtual background. Follow this link to YorkU-themed virtual backgrounds that you can download and use. (<https://www.dropbox.com/sh/twewiddt4tviz9x/AADyjLc8Uwp6nBxNBwzwVLJPa?dl=0>). Again, ensure you are using the most updated version of Zoom otherwise you might have issues with virtual background. For more info, see Zoom resource page (<https://support.zoom.us/hc/en-us/articles/210707503-Virtual-Background>).
5. For best experience it is preferred that you have your camera on during lecture
6. If exams are held virtually, during such exams (midterm/final), your camera option in Zoom MUST be turned on.
7. Ensure professional and courteous conduct at all times: for example, it is NOT acceptable to appear on Zoom in your pyjamas!
8. See this link to read about other recommendations from YorkU IT: <https://yorku.zoom.us/#guides>.

PLEASE NOTE:

If and when course related materials (lectures/seminars/exams) are delivered remotely, students must make every effort to arrange adequate internet connection, especially for tests and exams. If you have any specific concerns about your internet connection, seek all available options for writing your exam in a location with a stable internet connection. Students that are not confident they can access a reliable internet connection must communicate their concerns to the instructor well in advance of the test/exam."

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 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 (especially 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 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: by the end of the course, students should

- a. Be able to critically discuss integrative metabolism of macronutrients (carbohydrate, protein, and lipids) and micronutrients. They should be able to discuss the complex interactions between macronutrient availability, tissue specific metabolism, and physiological state of the individual.
- b. Be able to discuss how macronutrients are utilized during physical activities, and how some diseases affect nutrient metabolism and utilization.
- c. Have been exposed to skills and steps involved in designing and performing rigorous nutrition-related studies, including experimental design, subject selection, decision as to statistical analyses, data presentation and interpretation.
- d. Developed skills in giving short oral scientific presentations and responding to audience questions.
- e. Be able to make informed decisions about choice of and timing of nutrient consumption before, during and after physical activities.
- f. Have developed better inter-personal skills, through the assigned group readings and presentations. As a result of this exercise, students should also have developed student-driven learning skills.

COURSE STRUCTURE

- Lectures: Class notes will be available for download on **eClass** site for the course.
- Group power point presentations and written reports coordinated by the instructor. Students will read, present, and discuss published relevant 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, Smith JL, and Carr TP. **Advanced Nutrition and Human Metabolism**. 8th or 7th Edition (at YorkU (Petrie) Library: [QP 141 G76 2018](#)). Wadsworth, Cengage Learning. Belmont, CA, USA, 2022 (ISBN 978-0357449813), 2018 (ISBN: 9781305627857), or 1305627857; 6th edition ([QP 141 G76 2013](#)) ISBN-13: 978-1-133-10405-6 or 5th 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

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

- Groups #1-4: Thursday, Nov 4, 2021
- Groups #5-8: Tuesday Nov 9, 2021
- Groups #9-12: Thursday Nov 11, 2021
- *Groups #13-16: Tuesday Nov 16, 2021 *(if required)

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Midterm 1	20%
Midterm 2	20%
Power Point Presentation (Group Assignment)	20%
Final exam (cumulative)	40%

Grading: The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests* will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.) (For a full description of York grading system see the York University Undergraduate Calendar - <http://calendars.registrar.yorku.ca/2010-2011/academic/index.htm>)

MIDTERMS AND FINAL EXAM

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

Midterm:

- 1. Thursday September 30, 2021: includes material covered in class up to and including Sept 28, 2021
- 2. Thursday October 28: covers materials in lectures presented between October 5 and October 26
- Presentations are 18 minutes long.
- **Student attendance is mandatory**

*Assignment into groups (2 students per group) will be random. Assignment into groups along with paper articles will be done by the week of October 11, 2021.

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.

MISSED EXAMS.

PLEASE NOTE: You are strongly advised to write the Midterm exams; if you decide not to, no documentation is required if you plan to miss the Midterm, but you must let the instructor know, by email

to KINE4130@yorku.ca, no later than Tuesday September 28 and by October 26, 2020, for Midterms 1 and 2, respectively. *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 35%; that is, **there is a 2.5% penalty for EACH Midterm that you miss without informing the instructor of your intention.***

If, for any reason, you do not write the Midterm/s, the weight of the exam/s will be added to that of the Final Exam.

DEFERRED FINAL EXAM:

If you do not write the Final Exam or Midterm exam/s, you will write a **Deferred Exam *AFTER*** York U's official fall term final exam period, likely late January or February 2022. 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)

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/s, if applicable), subject to relevant penalties as indicated above.

SUGGESTIONS ABOUT DOING WELL IN THE COURSE:

Come to class

Take HANDWRITTEN notes; summarize lectures immediately after class

Review lectures frequently

Read to understand and apply facts

Write the midterm exams!

FURTHER INFO ABOUT THE ASSIGNMENT

Worth 20% of course grade:

Students will work in groups of 2 students/group. **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.

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 instructors (virtually).	Email copies of your presentation File & 2-page summary <u>to instructor.</u> <u>These must be received by 4pm on the indicated date.</u>	Virtual Presentation
#1-4	Week of Oct 11	Till Nov 2, 2021	Nov 2, 2021	Nov 4, 2021

#5-8	As above	Nov 7, 2021	Nov 9, 2021
#9-12 #13-16	As above	Nov 9, 2021: Groups #9-12 Nov 14, 2021: Groups #13-16	Nov 11, Nov 16

NOTE: when emailing the required documents, **send the required files**, NOT the links to the files. Sending links would be the same as if you did not send the files and for that, you will be penalized.

Group grades for the assignment will be based on:

- Strict compliance with the instructions relating to the assignments (2/20): timeliness about submission deadlines, readiness to present at allotted day and time.
- Presentation: Quality and clarity of presentation, and organization of materials in a logical manner, able to orient the class towards important points (5/20), background info and preparation (2/20), slide quality and labelling, including group number, title and group members' names (2/20); time management and ability to work together as a group, contributions to group efforts (2/20), ability to answer questions (3/20).
- Final individual grade will also reflect attendances (2/20) and active participations in discussions during seminars (other than your presentations) (2/20)

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 students per group*.
- Each group will give an 18-minute (maximum) seminar on an article published in a peer-reviewed scientific journal in the last 2-3 years.

Recommendation: 15-minute presentation; 3 minutes 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 emailed to both the instructor 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 your group is not ready at the time allocated to you.

POWERPOINT PRESENTATION OUTLINE

I. Introduction (2-3 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 (0.5-1 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) (0.5-1 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 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 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)*'

ACADEMIC HONESTY AND INTEGRITY

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: <https://secretariat-policies.info.yorku.ca/>

In this course, we strive to maintain academic integrity to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing SPARK's Academic Integrity module at the beginning of the course. Breaches of academic integrity range from cheating (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.) to aiding and abetting (helping someone else to cheat). All breaches in this course will be reported to the appropriate university authorities, and can be punishable according to the Senate Policy on Academic Honesty.

To promote academic integrity in this course, students will be normally required to submit their written assignments to Turnitin (via the course eClass) for a review of textual similarity and the detection of possible plagiarism. In so doing, students will allow their material to be included as source documents in the Turnitin.com reference database, where they will be used only for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin service are described on the Turnitin.com website.

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...

'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."

While all individuals are expected to satisfy the requirements of their program of study and to aspire to achieve excellence, the university recognizes that persons with disabilities may require reasonable accommodation to enable them to perform at their best. The university encourages students with disabilities to register with Student Accessibility Services to discuss their accommodation needs as early as possible in the term to establish the recommended academic accommodations that will be communicated to Course Directors through their Letter of Accommodation (LOA). Please let me know as early as possible in the term if you anticipate requiring academic

accommodation so that we can discuss how to consider your accommodation needs within the context of this course. Sufficient notice is needed so that reasonable steps for accommodation can be discussed. Accommodations for tests/exams normally require three (3) weeks (21 days) before the scheduled test/exam to arrange.

For more information, please access the following website: <https://secretariat-policies.info.yorku.ca/policies/academic-accommodation-for-students-with-disabilities-guidelines-procedures-and-definitions/>

Audio-visual recordings: Please review the guidelines <https://ipo.info.yorku.ca/privacy/guidelines-for-the-taking-and-use-of-photographs-video-and-audio-recordings-by-employees/> for the taking and use of photographs, video and audio recordings. Please note that recordings (lectures, seminars) 1) should be used for educational purposes only and as a means for enhancing accessibility; 2) students do not have permission to duplicate, copy and/or distribute the recordings outside of the class (these acts can violate not only copyright laws but also FIPPA <https://www.ontario.ca/laws/statute/90f31> and intellectual property rights); and 3) all recordings will be destroyed after the end of classes. Course materials may not be shared/redistributed by any means/tools with others except with prior permission of the instructor.

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): <https://www.yorku.ca/secretariat/policies/>

- 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