



HK*4371 Research in Human Health and Nutritional Sciences I

Summer 2023

Section(s): C01

Department of Human Health and Nutritional Sciences

Credit Weight: 0.50

Version 1.00 - May 10, 2023

1 Course Details

1.1 Calendar Description

First part of the two-semester course HK*4371/2. The student will select a research topic and design and complete a project in an area of interest, in consultation with a faculty advisor. This is a two-semester course offered over consecutive semesters. When you select it you must select HK*4371 in the first semester and HK*4372 in the second semester. A grade will not be assigned to HK*4371 until HK*4372 has been completed. Students must make arrangements with both a faculty advisor and the course coordinator at least one semester in advance and the signature of the course coordinator will be required to select the course. A departmental registration form must be obtained from the course coordinator and submitted no later than the second class day of the semester in which the student is registered for the course.

Pre-Requisites: 12.00 credits
Restrictions: Course coordinator consent required.

1.2 Timetable

Timetable is subject to change. Please see WebAdvisor for the latest information

1.3 Final Exam

There is no final exam for this course.

2 Instructional Support

2.1 Instructional Support Team

Course Co-ordinator: John Srbely

Email: jsrbely@uoguelph.ca
Telephone: +1-519-824-4120 x52058
Office: ANNEX 281
Office Hours: There are no formal office hours. Please email any questions or concerns to the course coordinator, Dr. John Srbely (jsrbely@uoguelph.ca)

3 Learning Resources

3.1 How to Register for a Research Project Course

- In order to register for the course, you first need to find a faculty advisor. This would be someone who's area of research interests you. Generally, this can be accomplished by looking at faculty profiles to see who's research interests you, or possibly based on who taught a favourite course that really stimulated you. Then, email that faculty to see if they will advise you. Your advisor must be a faculty member - see below.
- Once you have found an advisor, you and your advisor need to fill out/sign the course information form (this is different from the University course waiver form). These forms and all instructions for registering and uploading your forms for this course can be found on the Undergraduate Research website below:
<https://uoguelphca.sharepoint.com/sites/HKUndergraduateResearchandLiteratureReview>
- Please note that your faculty advisor only signs your course information form, and NOT the University course waiver form - the course coordinator (Dr. John Srbely) does that.
- Please note that EVERY student registered in a research project course within the College of Biological Science is required to complete a brief, online safety module. You will be contacted by someone within the College regarding how to sign up for this online module. This must be completed and the certificate shown to your advisor before beginning work in the lab.

3.1 Form

Department of Human Health and Nutritional Sciences

Please use the following link below to register and upload your forms:

<https://uoguelphca.sharepoint.com/sites/HKUndergraduateResearchandLiteratureReview>

- HK*4230 Advanced Study in Human Health and Nutritional Sciences
- HK*4360 Research in Human Health and Nutritional Sciences

- HK*43712 Research in Human Health and Nutritional Sciences
- This form must be completed **prior** to requesting a signature on the course waiver form (*instructor consent is required for registration in any of the above listed courses*).
- Detailed course descriptions can be found on our departmental website at:
<https://www.uoguelph.ca/hhns/undergraduate/undergraduate-courses>

TO BE COMPLETED BY STUDENT:

Name: _____ ID #: _____

U of G Email address: _____ Major: _____

Current Semester: _____ Signature: _____

Do you have the required prerequisite of 12.00 credits? Yes No

Semester and Year course will be taken: Spring Fall Winter 20__

Intended course: HK*4230 (Lit Rev) HK*4360 (Research Project) HK*43712 (Research Project)

TO BE COMPLETED BY FACULTY ADVISOR:

Is the proposed lit review/project relevant to the general area of human health? Yes No

Indicate which of the following 5 areas most closely describes the project:

Nutrition / nutraceutical sciences / nutrigenomics
genetics

Physiology / metabolism /

Exercise Physiology / Performance

Biomechanical / neural / movement

Biomedical

For Research Projects Only:

Does this project involve actual hands-on experience in a lab, field or other research environment? Yes No

Does this project involve only the analyses of data already collected? Yes No

Does the proposed project involve the use of animal or human subjects? Yes No

If yes, has the necessary ethical approval been, or will be obtained? Yes No

If ethical approval is not yet in place, is there a default plan for the student's project should the required approval not be obtained in time for planned experiments? Yes No

Name: _____ Dept.: _____

Signature: _____

Please use the following link below to register and upload your forms:

<https://uoguelphca.sharepoint.com/sites/HKUndergraduateResearchandLiteratureReview>

4 Learning Outcomes

4.1 Course Learning Outcomes

By the end of this course, you should be able to:

1. Think critically
 2. Integrate information
 3. Develop scientific writing skills
 4. Develop independent thought process
 5. Develop scientific oral presentation skills
 6. Develop analytic and data analysis skills
 7. Learn how to design a study and generate hypotheses
-

5 Teaching and Learning Activities

5.1 Course Schedule

There is no formal class meeting for this course

5.2 Course Content

Independent research and writing. Students should regularly consult with their faculty advisor to ensure adequate progress.

5.3 Important Dates

Please check Section 6.2 "Assessment Details" and/or the Undergraduate Research website (link below) for information on important dates and deadlines for all assignments:

<https://uoguelphca.sharepoint.com/sites/HKUndergraduateResearchandLiteratureReview>

*****Note: Late penalty of 5% per day applies to all assignments (unless pre-approved by course coordinator prior to the deadline).**

6 Assessments

6.1 Marking Schemes & Distributions

Name	Scheme A (%)
Research Proposal	20
Seminar	30
Paper	40
Self Reflection	10
Total	100

6.2 Assessment Details

Research Proposal (20%)

Due: Fri, Jun 9, 11:59 PM

Learning Outcome: 1, 2, 3, 4, 7

Email to your advisor AND upload a copy to Dropbox by the deadline. Proposals will be graded by your advisor.

Seminar Presentation (30%)

Due: end of Fall 2023 semester

Learning Outcome: 1, 2, 4, 5

Presentations are not due this semester. They are submitted next semester (Fall 2023) with HK*4372.

Paper (40%)

Date: end of Fall 2023 semester

Learning Outcome: 1, 2, 3, 4, 6, 7

Final papers are not due this semester. They are submitted next semester (Fall 2023) during HK*4372.

Self Reflection (10%)

Date: end of Fall 2023 semester

Self-reflections are not due this semester. They are submitted next semester (Fall 2023) with HK*4372.

6.3 Additional Information

Research Proposal

All students will prepare a research proposal for their intended study. Proposals should be

approximately 3 pages and follow the following format:

- Course name, title of project, student name/ID, advisor name.
- 12-point font, double-spaced
- Approximately a one page (succinct!) introduction with the necessary background information, ending in a clear statement of the hypothesis(es) or objectives. A few key references may be used in the text (abbreviated journal name, volume, pages, year) as necessary.
- Approximately one page or less of methods to be utilized, ending with the anticipated findings and how these would support your hypotheses.
- A final page indicating the approximate budget. This does not need to be exact; it is designed to give the students an appreciation and perspective of the costs associated with research. This will likely require some input from your project advisor. Even if your project is a part of a larger study, you should indicate the costs relevant to what you are doing.
- **LATE SUBMISSIONS ARE PENALIZED 5% per day unless pre-approved by the course coordinator.**
- Proposals will be graded by the advisor.

The following are not due until NEXT semester!

Seminars

- The presentation at the end of the second semester (HK*4372) is a chance to show the results of your work. Presentations should be 10 min in length with 3 minutes of questions afterwards.
- These presentations will be done via powerpoint (or similar software).
- Seminars will be graded by various Human Health and Nutritional Sciences faculty.

Final Paper

- The paper, including an abstract (200 words maximum), is a detailed presentation of the findings of your work. The paper format should follow standard research publications i.e. Major headings including introduction, methods, results, discussion and references, as well as any necessary tables and figures. Please discuss the expectations with your advisor. The format to be used for in-text referencing and the

bibliography should also be agreed upon by you and your advisor. Typically, this would be a referencing style used by one of the major physiology, nutrition or biomechanics journals; however, there is no specific format that must be followed for this course. PAPERS ARE GRADED BY THE ADVISOR.

- The abstract enables the reader to identify the basic content of a document quickly and accurately. References to the literature are usually omitted. The abstract should:
 - state the principal objective(s), question(s), or hypothesis (es) under investigation;
 - state the scope of the investigation;
 - briefly describe the methodology used;
 - summarize the results using specific data and indicating statistical significance;
 - state the principal conclusions;
 - state the scientific or clinical relevance

Self Reflection

You are being asked to focus on one aspect/task of this project that impacted you, and to reflect on this experience using the DEAL Model (see *Introduction to Reflection* document on Courselink). Thus, you will be **describing** the experience, **evaluating** it under at least one dimension of learning (i.e. personal, academic, and civic engagement, and **articulating learning** from the experience and applying it to future experiences. Examples of an aspect/task of this project that you can focus on include:

- Working in a team / Teamwork
- Leadership
- Career awareness
- Deeper understanding of course concepts
- Community interaction
- Personal development (e.g. adaptability, self-awareness, responsibility, etc. – only pick 1 aspect of personal development to focus on)
- Skill development (e.g. time management, project management, organizational skills, presentation skills, writing skills, technical skills, etc. – only pick 1 aspect of personal development to focus on)

You are welcome to reflect on any challenges that this project presented to you and how you overcame those challenges (or did not). However, this is not meant to be used as a medium to vent about your team or other classmates, the course, the instructor, stakeholders, etc. We ask that you be respectful of others and uphold a high degree of professionalism in this reflection; not doing so will negatively impact your grade on this component.

Additional information and resources for all assignments can be found on the Undergraduate Research website below:

<https://uoguelphca.sharepoint.com/sites/HKUndergraduateResearchandLiteratureReview>

7 Course Statements

7.1 You, Your Advisor and the Research Project

- Begin by identifying a GENERAL area of research for your topic. Clicking on faculty research links on the department web site is a good way to begin, or by reading recent publications of a potential advisor to determine your level of interest in that subject. Be open minded about your topic and advisor. Also, the advisor must be a University of Guelph faculty ... but not necessarily from OUR department. Clearly, the topic should be something relevant to human health, nutrition, or metabolism. Graduate students, research technicians, postdoctoral fellows, etc., CANNOT act as advisors.
- Start early! Most faculty will only accept a few students at any given time, so “spots” are limited. Some ways of approaching faculty are more successful than others. Contact can be made either by phone, email, or in person. Provide as much information about yourself as you can: your program; general background including courses, previous research or laboratory experience; motivation/reason for doing research, etc.

7.2 Evaluation - Research Proposal

All students will prepare a research proposal for their intended study. Proposals should be approximately 3 pages and follow the following format:

- Course name, title of project, student name/ID, advisor name.
- 12-point font, double-spaced
- Approximately a one page (succinct!) introduction with the necessary background information, ending in a clear statement of the hypothesis(es) or objectives. A few key references may be used in the text (abbreviated journal name, volume, pages, year) as necessary.
- Approximately one page or less of methods to be utilized, ending with the anticipated findings and how these would support your hypotheses.
- A final page indicating the approximate budget. This does not need to be exact; it is designed to give the students an appreciation and perspective of the costs associated with research. This will require input from your project advisor. Even if your project is a part of a larger study, you should indicate the costs relevant to what you are doing.

- Proposals are graded by the advisor - please consult with your advisor on the final content and formatting requirements.
- **The proposal should be emailed directly to your advisor, and a copy uploaded to Dropbox by the stated deadline.**
- **Late submissions are penalized 5% per day, unless pre-approved by the course coordinator....your advisor cannot approve deadline extensions.**

7.3 Evaluation - Seminars

The seminar at the end of the semester is a presentation of the results of your work.

Students will have 10 min plus a 3 min question period. Seminars will be delivered in person.

- The schedule for presentations will be posted on the Undergraduate Research website (link below) approximately 1 week prior to seminar day:

<https://uoguelphca.sharepoint.com/sites/HKUndergraduateResearchandLiteratureReview>

- Seminars will be graded by various Human Health and Nutritional Sciences faculty.

7.4 Evaluation - Paper

- The paper, including an abstract (200 words maximum), is a detailed presentation of the findings of your work. The paper format should follow standard research publications i.e. Major headings including introduction, methods, results, discussion and references, as well as any necessary tables and figures. **Please discuss the expectations with your advisor.** The format to be used for in-text referencing and the bibliography should also be agreed upon by you and your advisor. Typically, this would be a referencing style used by one of the major physiology, nutrition or biomechanics journals; however, there is no specific format that must be followed for this course.
- LATE SUBMISSIONS ARE PENALIZED at 5% per day. Papers should be submitted by email directly to your advisor and uploaded to Dropbox by the indicated deadline (to confirm that papers have been submitted on time). Extensions are generally not granted, and must be done by the Course Coordinator (not the advisor).
- The abstract enables the reader to identify the basic content of a document quickly and accurately. References to the literature are usually omitted. The abstract should:
 - State the principal objective(s), question(s), or hypothesis (es) under investigation;
 - State the scope of the investigation;
 - Briefly describe the methodology used;
 - Summarize the results using specific data and indicating statistical significance;

State the principal conclusions;
State the scientific or clinical relevance.

7.5 Evaluation-Self Reflection

Self Reflection

You are being asked to focus on one aspect/task of this project that impacted you, and to reflect on this experience using the DEAL Model (see *Guide to Writing a Self Reflection in the Undergraduate Research Sharepoint site*). You will be **describing** the experience, **evaluating** it under at least one dimension of learning (i.e. personal, academic, and civic engagement), and **articulating learning** from the experience and applying it to future experiences. Examples of an aspect/task of this project that you can focus on include:

- Working in a team / Teamwork
- Leadership
- Career awareness
- Deeper understanding of course concepts
- Community interaction
- Personal development (e.g. adaptability, self-awareness, responsibility, etc. – only pick 1 aspect of personal development to focus on)
- Skill development (e.g. time management, project management, organizational skills, presentation skills, writing skills, technical skills, etc. – only pick 1 aspect of personal development to focus on)

You are welcome to reflect on any challenges that this project presented to you and how you overcame those challenges (or did not). However, this is not meant to be used as a medium to vent about your team or other classmates, the course, the instructor, stakeholders, etc. We ask that you be respectful of others and uphold a high degree of professionalism in this reflection; not doing so will negatively impact your grade on this component.

7.6 Hints

- The Seminars
 - Use several simple graphics (graphs and charts) rather than one complicated one, especially if you plan to discuss a subject at length. If the analysis of the graphics by a viewer will require more than 20 sec, consider using a sequence of graphs to progressively disclose the information. The more changes that you use, the less chance of losing your audience.
 - Don't leave a graphic on the screen after discussing it.
 - Limit each graphic to one main idea.

Use graphics or illustrations wherever possible.

Don't go too fast! To analyse a graph requires more time than viewing a visual image. Add a few seconds to your own analysis time (since you are more familiar with it than your audience!).

Don't make things too complicated or cluttered for your audience.

Examples:

When using line graphs, do not exceed 3 to 4 lines. Simplify scales.

When using bar graphs, do not exceed 7-8 bars. Avoid crowding.

When presenting text, limit the text to 6-8 words per line and 6 lines per slide. **DO NOT OVERDO THE AMOUNT OF TEXT IN YOUR PRESENTATIONS OR USE TOO SMALL A FONT.**

The more familiar you are with the information and graphics, the better your presentation. Preview your material and run through it prior to presentation.

- Evaluation of Seminars:

The following aspects of your presentation will be considered in establishing a grade:

Is the research hypothesis clear and delimited?

Is there a logical introduction to the hypothesis?

Is there a clear description of the important details of the methods used? the protocol followed? the important details of the results?

Were logical conclusions drawn around the research hypothesis?

Was the presentation clear and concise verbally? visually?

- The paper

There is not a minimum or a maximum number of references. The number will be determined by the topic of the research. Use the primary literature. Abstracts and reviews may be included in certain circumstances. Do not use the Internet unless you are quoting information from electronic versions of peer-reviewed journals. It is often beneficial to write the Abstract for the paper after completing the Introduction and the Methods sections but before starting the Results and Discussion. This helps to focus your thinking and assists in the identification of the significant ideas.

The following aspects of your paper will be considered in establishing a grade:

Is the research hypothesis clear and delimited?

Does the introduction logically support the hypothesis?

Is there a clear description of the important details of the methods used? the protocol followed? the important details of the results?

Were logical conclusions drawn around the research hypothesis?

Was the paper organized in a clear and concise manner?

- Don't forget ... your advisor will be grading your research paper! The guidelines above are just that ... guidelines! Be clear on what your advisor expects!

Additional information and resources have been provided for your assignments on the Undergraduate Research website (link below), however, consult your advisor on the expectations for your assignments.

<https://uoguelphca.sharepoint.com/sites/HKUndergraduateResearchandLiteratureReview>

7.7 Grading

- Proposals and Final Papers are graded by your faculty advisor.
- Self-reflections and presentations are graded by various faculty within the department of Human Health and Nutritional Science. Your advisor will not be grading your presentation.
- Extensions are generally not granted, and must be done by the Course Coordinator (not the advisor).

8 Department of Human Health and Nutritional Sciences Statements

8.1 Academic Advisors

If you are concerned about any aspect of your academic program:

- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

8.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist.
<http://www.learningcommons.uoguelph.ca/>
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: <http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics->

help and <http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help>

8.3 Wellness

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance.
<https://www.uoguelph.ca/counselling/>
- Student Health Services is located on campus and is available to provide medical attention. <https://www.uoguelph.ca/studenthealthservices/clinic>
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations.
<http://www.selfregulationskills.ca/>

8.4 Personal information

Personal information is collected under the authority of the University of Guelph Act (1964), and in accordance with Ontario's Freedom of Information and Protection of Privacy Act (FIPPA) <http://www.e-laws.gov.on.ca/index.html>. This information is used by University officials in order to carry out their authorized academic and administrative responsibilities and also to establish a relationship for alumni and development purposes.

For more information regarding the Collection, Use and Disclosure of Personal Information policies please see the Undergraduate Calendar.
(<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/intro/index.shtml>)

8.5 Course Offering Information Disclaimer

Please note that course delivery format (face-to-face vs online) is subject to change up to the first-class day depending on requirements placed on the University and its employees by public health bodies, and local, provincial and federal governments. Any changes to course format prior to the first class will be posted on WebAdvisor/Student Planning as they become available.

9 University Statements

9.1 Email Communication

As per university regulations, all students are required to check their e-mail account regularly: e-mail is the official route of communication between the University and its students.

9.2 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a

teaching assistant) in writing, with your name, id#, and e-mail contact. The grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Graduate Calendar - Grounds for Academic Consideration

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions

<https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml>

9.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml>

Graduate Calendar - Registration Changes

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml>

Associate Diploma Calendar - Dropping Courses

<https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml>

9.4 Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

9.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to make a booking at least 14 days in advance, and no later than November 1 (fall), March 1 (winter) or July 1 (summer). Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time.

For Guelph students, information can be found on the SAS website
<https://www.uoguelph.ca/sas>

For Ridgetown students, information can be found on the Ridgetown SAS website
<https://www.ridgetownc.com/services/accessibilityservices.cfm>

9.6 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity, and it is the responsibility of all members of the University community-faculty, staff, and students-to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff, and students have the responsibility of supporting an environment that encourages academic integrity. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

Undergraduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>

Graduate Calendar - Academic Misconduct
<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml>

9.7 Recording of Materials

Presentations that are made in relation to course work - including lectures - cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

9.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies, and regulations that apply to undergraduate, graduate, and diploma programs.

Academic Calendars

<https://www.uoguelph.ca/academics/calendars>

9.9 Disclaimer

Please note that the ongoing COVID-19 pandemic may necessitate a revision of the format of course offerings, changes in classroom protocols, and academic schedules. Any such changes will be announced via CourseLink and/or class email.

This includes on-campus scheduling during the semester, mid-terms and final examination schedules. All University-wide decisions will be posted on the COVID-19 website (<https://news.uoguelph.ca/2019-novel-coronavirus-information/>) and circulated by email.

9.10 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g.. final exam or major assignment).

9.11 Covid-19 Safety Protocols

For information on current safety protocols, follow these links:

- <https://news.uoguelph.ca/return-to-campus/how-u-of-g-is-preparing-for-your-safe-return/>
- <https://news.uoguelph.ca/return-to-campus/spaces/#ClassroomSpaces>

Please note, these guidelines may be updated as required in response to evolving University, Public Health or government directives.
