

**NFS 394Y/494Y- RESEARCH PROJECTS IN NUTRITIONAL SCIENCES  
GUIDELINES 2022-2023**

*These courses are offered to third/fourth year students who have a strong academic background with at least a B+ in the 2<sup>nd</sup>/3<sup>rd</sup> year and an interest in research.* The courses provide an exciting, challenging, and educationally rewarding experience to qualified students. The student, with guidance from a staff member, plans, carries out, and writes a final report on an approved, limited research project. In this way, the individual student is provided with experience in all the important aspects of research. The courses give the student a chance to experience the challenges, rewards and frustrations of life in research.

Students interested in the research courses are encouraged to become familiar with the research activities and interests of core academic and cross-appointed staff members. This information is found on the departmental website. It is recommended that the student contact those individuals working in the areas of interest to discuss the staff member's availability for NFS 394Y/494Y supervision and possible research topics. Acceptance into the course requires:

1. Prior consent of the supervising staff member.
2. Strong academic background (B+).
3. Courses taken in nutrition.
4. Departmental approval.

**Orientation Meeting:** Friday, September 23, 2022, 1:10 - 2:00 p.m. MSB5254.

### **Research Proposal**

The student is required to present a written Research Proposal to the Course Coordinator by **Wednesday, November 23, 2022 (Whole Day Event<sup>1</sup>)**. This should follow a format covering the seven items indicated under Protocol Format. Each student is also expected to make a 10-minute oral presentation followed by 3-5 minutes of questions (total time 15 minutes) on the proposed research on Wednesday, November 23, 2022 (schedule TBD). **All NFS 394Y/494Y students and their supervisors are expected to attend these presentations.** In consultation with your supervisor, students also must attend and complete all training courses relevant to the student's project location and type.

### **Final Research Report**

The student is required to prepare a final report on the work carried out, and submit it, initially to the Supervisor for comments and/or modification. Subsequently, the final typed version is to be submitted to the Course Coordinator. **The format of this report should follow that of a**

---

<sup>1</sup> Students with course conflicts can be absent to attend other classes, but are expected to attend when not in other classes.

**reputable scientific journal (mandatory to indicate which one).** In addition, each student will present a 10-minute oral presentation followed by a short question period (total time 15 minutes) on the research to the NFS 394Y/494Y student-staff group (**Thursday, March 30, 2023, Whole Day Event<sup>1</sup>**).

### **Deadlines**

In order that grading in the course can be completed on time, the following deadlines for submission of proposals and reports will be used:

**Wednesday, November 23, 2022**

Whole Day Event<sup>1</sup>  
Format – in person  
Room - TBD

Oral Presentations of Research Proposal and submit written Research Proposals to Course Coordinator

**Thursday, March 16, 2023**

Completed Research Report sent to Supervisor

**Thursday, March 30, 2023**

Whole Day Event<sup>1</sup>  
Format – in person  
Room - TBD

Oral Presentations of Research Reports and submit Final Research Report to Course Coordinator

All students are urged to submit their written materials to the Supervisor two weeks in advance of these deadlines for review and feedback.

### **Research Meetings**

The Course Coordinator is available to assist students if difficulties arise or if general advice is required.

### **Important Notes**

- The last date for students to withdraw from the course without academic penalty is **Monday, February 20, 2023.**
- Students should recognize that the outline for a proposal is closely similar to that of the formal report to be presented at the end of the course. Thus, time spent in assembling and refining a good proposal will greatly simplify preparation of the final report.
- Problematic situations often occur in research and individuals who encounter such difficulties should recognize that research is essentially a problem-solving experience. In the event that a student has difficulties and fails to meet initial objectives the student should discuss this situation with the course Coordinator. The final mark will be based on the approaches taken to overcome the problems. In all cases, the emphasis in marking will be an evaluation of the student's prowess in the scientific methodology rather than the production of publishable results.
- All research work with humans or animals raises questions of an ethical and/or moral

nature. The student is expected to address this topic in the proposal and show how questions of this type are to be resolved. Human and animal subject's approval forms are required and should be included as appendixes.

## **Guide for Research Proposal**

There are numerous approaches that can be taken in drawing up a research proposal. For NFS 394Y/494Y, the proposal should be brief [five pages double-spaced, references can be on a separate page(s)], clearly indicating the interest area and its importance, identifying specific problems or questions to be addressed in the study, and presenting the work to be done and the approach to be taken. The following outline elaborates on this scheme. Grading of proposal will consider each of the following.

### **Protocol Format**

#### **1. Importance of or Interest in Topic**

The research area should be introduced briefly and its importance indicated.

#### **2. Present Knowledge**

The highlights (literature review) of what is presently known about the subject should be covered concisely and questions remaining or gaps in the knowledge should be noted.

#### **3. Project Focus and Hypothesis**

The specific question or problem that will be the focus of the study should be clearly laid out and the contribution that it will make to knowledge, understanding, or practices in the area should be identified. State your hypothesis.

#### **4. Design**

A **brief** but detailed experimental plan or outline of the projected work should be presented along with a reasoned explanation for the approach being taken. The project should be realistic in terms of what can be accomplished in this course and should provide the student with experience in all areas of a research project, from development to completion.

#### **5. Experimental Work- Data Collection**

This part should summarize the actual procedures or analytical methodology to be used in obtaining results and include steps taken to ensure reliability, precision, and accuracy. It should include the source (i.e. human, animal, plant) of the samples to be analyzed, the number of the samples to be analyzed, and the time frame for sample acquisition and analysis.

#### **6. Data Analysis**

The methods to be used in processing the data and in ensuring their validity should be presented.

## 7. ***Time Allocation***

A timetable indicating dates by which important goals are expected to be reached or experimental work completed should be included at the end of the proposal. **This is a full course with an estimated time commitment of 180 or 200 hours**, or an average of 8 hours/week during the term. Projects undertaken need to be realistic for this time. Discuss with your supervisor.

## **Marking Scheme**

**Part 1:** The Written Research Proposal and its Oral Defense will account for 20% of the final mark. The written will count for 10% of the final mark. The oral will count for 10% with equal weighting from the Supervisor, Course Coordinator, other staff members, and 394/494 students attending.

The **Written Research Proposal** will be marked as follows:

- Literature Review: 25%
- Identification of problem/determination of hypothesis: 25%
- Design for testing hypothesis, including method of data collection, data analyses, potential problems: 50%

The **Oral Presentation of the Research Proposal** will be marked as follows:

- Literature Review: 20%
- Identification of problem hypothesis 20%
- Design for testing hypothesis, including method of data collection, data analyses, potential problems: 20%
- Defense - answering questions 20%
- Participation and asking questions 20%

**Part II:** The Final Evaluation is worth 60% of the final mark. Of this, 40% will be based on the final written report as judged by the Course Coordinator. The oral presentation of the results, discussion and conclusions will determine the final 20% of the mark. All faculty members in attendance, or their approved delegate, and other 394/494 students will judge this component.

The written report should be in the format of a journal article appropriate to our area of research. It should be no longer than 18 pages double spaced, **including text**, data and references. Extra pages will **each** reduce the final mark by 3%. The journal format/style being followed should be indicated in your title page. Marks will be deducted if the current journal style is not followed, including proper citations.

The **Written Report** should be formatted for presentation of topics 1-6 described above under protocol format but the balance will shift toward presentation of results, discussion and conclusion.

- Literature Review, Identification of problem/determination of hypothesis, design for testing hypothesis, including method of data collection, data analyses. 30%
- Presentation of results, discussion and conclusion 70%

The **Oral Presentation** will be marked as follows:

- Background 20%
- Presentation of results and conclusions 50%
- Defense – answering questions 20%
- Participation and asking questions 10%

Your supervisor's assessment of your contribution to the research and demonstrated interest in and aptitude for research will be worth 20 % of the final grade.

**Dr. Adam Metherel, Course Coordinator**

Medical Sciences Building, 1 King's College Circle, 5<sup>th</sup> Floor, Room 5344

Email: [adam.metherel@utoronto.ca](mailto:adam.metherel@utoronto.ca)

Students who are absent from class for any reason (e.g., COVID, other illness or injury, family situation) and who require consideration for missed academic work should report their absence through the on-line absence declaration. The declaration is available on ACORN under the Profile and Settings menu. Students should also advise the course coordinator and their research supervisor of their absence.