Kinesiology 4443  
Research Project in Kinesiology

This research *laboratory-based* course is restricted to 4th year students enrolled in the Honours BSc. Kinesiology program. Enrolment is limited and will depend on the availability of individual faculty members and their willingness to act as a supervisor. Students must get written approval from one of the designated research faculty members (listed below) before they can register for this course.

**Faculty members who are eligible to accept students** (note: Faculty members may choose *not* to accept students in any given year):

Dr. E. Buckolz  
Dr. J. Dickey  
Dr. T. Jenkyn  
Dr. J. Kowalchuk  
Dr. P. Lemon  
Dr. G. Marsh  
Dr. M. Mottola  
Dr. V. Nolte  
Dr. E. Noble  
Dr. D. Paterson  
Dr. C. Rice  
Dr. K. Shoemaker

B.Sc. Honors Kinesiology students wishing to enrol in Kinesiology 4443 **MUST:**

1. Read the attached course outline.
2. Contact a proposed supervisor (see list above) for an interview to discuss a potential project and the professor's availability and willingness to be a supervisor.
3. Fill out an Application Form including the supervisor’s signature to indicate their agreement to be your supervisor.
4. Attach a letter stating reason(s) for wanting to enrol in this course.
5. Return the completed form and letter of intent to the Undergraduate Office.
6. Kinesiology 4443 cannot be selected during web course registration.
7. Students should check with the Kinesiology Undergraduate Office about the final decision before the final day to add a full course (see deadline date for current year in your Academic Calendar).

**NOTE:** ENROLMENT IN THIS COURSE IS LIMITED. STUDENTS WITH AN ACADEMIC AVERAGE LESS THAN 80% WILL NOT NORMALLY BE CONSIDERED.
CONTRACT
Kinesiology 4443
An Independent Research Project in Kinesiology

Student’s Name: ___________________________________________ Student #: __________________

UWO Email Address: _______________________________________ Date: ______________________

Name of Supervisor: ___________________________________________________________________

AREA OF RESEARCH: (Brief description of study - Objectives/research method/etc)
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Student Time commitment: ____________________________________________________________

STATEMENT OF RECOGNITION: (Student)
I have read the detailed course outline and understand and accept the structure & evaluation system.

_____________________________________  __________________________
Student Signature     Date

APPROVAL

_____________________________________  __________________________
Supervisor Signature     Date

_____________________________________  __________________________
Director of Kinesiology     Date

INSTRUCTIONS TO STUDENT:
1. Submit the completed form with Supervisor’s signature to the Undergraduate office no later than September 14.
2. Once approved by the Director of Kinesiology, you must formally add the course no later than the UWO approved Add deadline date.
3. You must provide a copy of the written research report to the Undergraduate Office. Please email to wmandigo@uwo.ca

INSTRUCTIONS TO SUPERVISOR:
1. Final marks are to be submitted to the Undergraduate Office one week after the end of classes.
2. No grade can be submitted for incomplete work.
KINESIOLOGY 4443
SENIOR RESEARCH PROJECT

CALENDAR COPY

The course is intended to provide a major laboratory course in experimental Kinesiology. The course involves laboratory research, instruction, and communication in science.

Prerequisites
- permission of research supervisor & Director of School
- minimum of 10 hours per week
- enrolment limited to Honors BSc Kinesiology students

COURSE OBJECTIVES

Kinesiology 4443 is intended to provide a major laboratory course in experimental Kinesiology. The course involves laboratory research, instrumentation, and communication in science. Following completion of this course, students will be able to:

1. work independently or collaboratively on a research project in a specific area of Kinesiology where the project includes literature review, experimental design, collection, analysis, and interpretation of results, and writing of a scientific report.

2. perform the experimental procedures and operate the scientific equipment relevant to the research project.

3. organize and make (2) scientific presentations

COURSE CONTENT

Laboratory. After consultation with a faculty member, students will work in a research laboratory for the academic year. Students will be given appropriate instruction in techniques used in the laboratory and will be supervised in carrying out a research project, involving literature review, experimental design, collection and analysis of data, and interpretation of data. Research projects may take the form of relatively independent work, or may involve collaboration in ongoing projects in that laboratory. It is expected that students will spend the equivalent of a minimum of one full day/week in the laboratory. Students should organize their timetables accordingly.

The following activities will be supervised:

a) Instruction on how to give a 10-15 minute presentation
b) Instruction on how to prepare an abstract of a research project
c) Student presentations of the literature review, rationale, and proposed experiments for their research projects (end of first term)
d) A 10-15 minute oral presentation of the final results and conclusions (end of second term)
e) Submission of a final research report in the form of a scientific paper (immediately following final presentation).

EVALUATION

Students will be evaluated by their supervisor with respect to their performance in the laboratory. This will include not only technical skills, but also their familiarity with the literature, and their contribution to the experimental design, analysis, and interpretation of the data. This evaluation will be done twice. The first evaluation will be done at the end of the first term and is designed to inform the student on his/her progress to date. The second evaluation will be done at the end of the second term. The evaluation of the scientific paper written by the student will be completed by the supervisor and one other faculty member. Feedback will be given to students as soon as possible after presentations. Student participation in the discussion sessions is expected. All faculty will participate in evaluation of student performance at the presentations. The presentations will be done in a group format with all students and faculty in attendance (time and dates to be worked out after consultation with students and professors).
Details of the (suggested) evaluation are outlined below (negotiated at first class):

<table>
<thead>
<tr>
<th>Activity</th>
<th>Weight</th>
<th>Evaluator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory performance (1st term)</td>
<td>10%</td>
<td>Supervisor</td>
</tr>
<tr>
<td>Research proposal presentation (1st term)</td>
<td>10%</td>
<td>All faculty</td>
</tr>
<tr>
<td>Laboratory performance (2nd term)</td>
<td>20%</td>
<td>Supervisor</td>
</tr>
<tr>
<td>Final presentation (2nd term)</td>
<td>20%</td>
<td>All faculty</td>
</tr>
<tr>
<td>Research paper</td>
<td>40%</td>
<td>Supervisor + 1 Faculty</td>
</tr>
</tbody>
</table>

NOTE: 1. A similar project may not be completed as part of an independent study.
2. A copy of the final report must be handed in to the Undergraduate office.

PRESENTATION PROTOCOL

The outline below should be followed in preparing and making your presentation. The time devoted to each section is up to you, but remember that you have a maximum of 10-15 min. for the talk, plus 10-15 min. for questions. Consult with your supervisor in preparation for your talk. A practice run of your presentation with your supervisor is suggested. Students are expected to ask questions of their peers following each presentation during the question period. Note that supervisors do not grade their own students. Professors will provide written feedback on how to improve to each student following the proposal presentations.

Proposal Presentation

**Title**: Provide a short, descriptive statement of your project.

**Background and Rationale**: Give an orderly and clear presentation of important literature relevant to your project, and how it forms the basis for the questions or hypotheses you propose to investigate.

**Purpose & Hypotheses**: Present a concise statement(s) of the purpose or specific aims of your project and the hypothesis being tested.

**Experimental Design, Methods, Analysis**: Give a clear, orderly presentation of exactly what will be done, how it will be done, and how the data will be analyzed. This is an important section and should emphasize proper controls, methods of data collection, and plans for analyzing the results appropriately. Assumptions made and possible problems should be considered in light of limitations of experimental techniques or information in the literature.

**Anticipated Results and Interpretation**: What results are anticipated and how will these be interpreted in relation to the questions posed and the available literature?

Final Presentation

**Title**: Provide a short, descriptive statement of your project.

**Brief Recap** of study rationale, hypotheses, methodology, & design (3-4 minutes)

**Results**: In words and in graphic form, provide a concise overview of the main results of the study. This should include, when appropriate, the results of any statistical analysis done.

**Discussion**: The key results should be discussed in light of the research questions and the research literature that was used to develop the study. The presenter should discuss any limitations that may have prevented the research findings from being clear. Future directions for research should be suggested.

**Conclusions**: A point form summary of conclusions should conclude the presentation.
FINAL WRITTEN REPORT

The final research report should be written in a style similar to that used when a researcher submits a paper for consideration in a journal (e.g., see J. of Physiology format). Check with your supervisor for the specific details of style. In general, the paper should be 15-25, double-spaced pages (including tables, figures, and other inserts). The sections for the paper will be similar to the content of the two presentations and should include:

- title page
- abstract
- introduction (literature review; clearly stated purpose & research hypotheses)
- methodology (participants, procedure, analysis)
- results
- discussion
- conclusion
- references