Research Project and Seminar Course 4480E/4483E/4485E/4500E/4970E

Project Course Coordinators:

Dr. Eric Ball (ehball@uwo.ca - Room 366 Medical Sciences Building)
4483E (Biochemistry)
4485E (Clinical Biochemistry)
4500E (Chemical Biology)

Dr. Steven Kerfoot (skerfoot@uwo.ca - Room 312 Health Sciences Addition)
4970E (Microbiology & Immunology)

Dr. Paul Walton (pwalton@uwo.ca - Room 474 Medical Sciences Building)
4480E (Biochemistry & Cell Biology)

About the course:
The project course is the core of our honors modules. As a course, it is first and foremost a
guided educational program in which students work in research labs under the mentorship of
faculty and other lab members. Students will learn about the scientific process in the real world
by participating in answering real research questions. Students will also learn about
communicating the scientific process and findings through oral and written presentations. The
goal is to give students the opportunity to participate in science, rather than simply consume it.

Course organization:
The course is jointly administered by the Departments of Microbiology and Immunology,
Biochemistry, and Anatomy and Cell Biology. Together we organize the placements, scheduling,
and seminars. Students in any of these programs can select a supervisor in any of the
Departments.

Early September is devoted to required safety and other training courses that must be completed
before starting in the lab. Project matching must also be completed during this time. Projects
begin typically by the third week of September (see schedule).

Students will give their first oral presentation in mid-October (see schedule). This is intended to
give students the opportunity to introduce the background and rational to their project and outline
the methods that they will use to answer their research question(s). These presentations are
graded by faculty, other members of the department, and peers.

Final written reports are typically due at the end of March/early April (see schedule). These will
be graded by at least two faculty members from within the given department. Final oral
presentations will occur in early April and will again be graded by faculty, other members of the
department, and peers.
# Research Thesis Project - Course Schedule

## 2017 - 2018

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<tr>
<th>DATE</th>
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<tr>
<td>1-Sep-2017</td>
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<td></td>
<td><strong>DEADLINE FOR RESEARCH PROJECT PRE-MATCHING</strong></td>
</tr>
<tr>
<td>7-Sep-17</td>
<td>3:30 - 4:30 pm</td>
<td>MSB 384</td>
<td>Meet with all students. General course information (Biochemistry BBQ)</td>
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<tr>
<td>Sept 8-17</td>
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<td></td>
<td><strong>STUDENT/FACULTY INTERVIEWS</strong></td>
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<tr>
<td>13 Sep-17</td>
<td>2:00-4:00 pm</td>
<td>MSB 384</td>
<td>Animal Safety Concepts</td>
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<tr>
<td>15-Sept-17</td>
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<td><strong>DEADLINE TO SUBMIT PROJECT CHOICES ONLINE @4:00 PM</strong></td>
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<tr>
<td>18-Sept-17</td>
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<td><strong>RESEARCH PROJECTS START – Safety training is complete</strong></td>
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<tr>
<td>21-Sept-17</td>
<td>4:00 – 5:00 pm</td>
<td>MSB 384</td>
<td>Ethical Issues in Research</td>
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<tr>
<td>26-Sept-17</td>
<td>2:00 - 3:00 pm</td>
<td>MSB 193 A&amp;B</td>
<td>Graduate Studies Information Session for Biochemistry</td>
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<tr>
<td>28-Sept-17</td>
<td>2:00 - 3:00 pm</td>
<td>MSB 193 A&amp;B</td>
<td>Graduate Studies Information Session for M&amp;IM</td>
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<tr>
<td>5-Oct-17</td>
<td>2:30 – 5:30 pm</td>
<td>MSB 384</td>
<td>Ethics in Research Presentations</td>
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<tr>
<td>20-Oct-17</td>
<td>1:00 - 5:30 pm</td>
<td>HSA 62, 64, 66, 68, HAS 062, 064, 066, 068</td>
<td>First Research Project Presentations (15 min/each)</td>
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<tr>
<td>30-Dec-17</td>
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<td><strong>DEADLINE for December report</strong></td>
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<tr>
<td>15-Feb-18</td>
<td>2:00-4:00 pm</td>
<td>MSB 282</td>
<td>Guidelines for final report writing</td>
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<td>26-Feb-18</td>
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<td><strong>HAND IN PROJECT OUTLINE TO SUPERVISOR</strong></td>
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<td>2-April-18</td>
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<td><strong>DEADLINE TO Submit PROJECT REPORTS online @8:00AM</strong></td>
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**Note:** This deadline cannot under any circumstances be extended.

| 6-Apr -18 | 1:00 to 5:30 | HSA 62, 64, 66, 68, HAS 062, 064, 066, 068 | **FINAL PRESENTATIONS (30 min/each)** |
Choosing your project and supervisor:
The research projects undertaken by honors students can take very different forms, depending on the lab and type of research. The guiding principle is that students must perform a project designed to address a specific research question or questions. Discuss this with your supervisor.

Prior to the beginning of the term (see schedule) you can approach faculty that you are interest in working with about potential projects in their research group. By the middle of the summer, you will be given access to an OWL site with descriptions of available projects to help you with your search. Keep checking the OWL site as new projects will be loaded throughout the summer. Keep in mind that it is not required that you find a supervisor prior to the beginning of the term and projects will still be available. Project pre-matching ends September 1.

If you do find a supervisor prior to the beginning of the term, send an email confirming your match to the coordinator for your course (see above) with the details of your match. Copy your supervisor on this email. After this a more organized interview process will be instituted to ensure that all students have a supervisor.

For those students who did not arrange for a supervisor prior to September, the second week of the term (see schedule) will be dedicated to interviews to help you find a match. Expect to interview with no more than 4 potential supervisors, after which you will submit your ranked preferences. Faculty will do the same. The course coordinators will do our best to match students with their choice of project based on these rankings.

NOTE: Students may not carry out a Work Study placement in the same lab as they are doing their thesis project, as these are two separate programs.

Expectations in the lab:
Projects begin during the third week of September (see schedule). Students are expected to devote a minimum of 15 hours per week on their project. The actual hours spent in the lab should be discussed with your supervisor, but as a rule you should have kept your afternoons available.

NOTE: Project students may not work unsupervised in the lab, so do not expect to be able to do lab work on evenings or weekends.

NOTE: Labs can be hazardous places. Ask what the hazards are and know how to handle them safely. Basics will be covered in the mandatory courses at the beginning of September, but you should also receive lab-specific training when you start your project.

You should discuss additional expectations with your supervisor. Most labs will have group meetings that you should plan to attend. The quality of your experience in this course is highly dependent on the efforts that you put in.
First Oral Presentation:  8% of final grade
The first oral presentation will occur early on in your project (see schedule). It should be no longer than 10 min, followed by 5 min for questions. Presentations that go over this time will be cut off. Students should present the research question(s) that their proposal will address, background information and preliminary results, and outline the methods that will be used. Slides should be prepared in PowerPoint or similar. Students should discuss details of content and form with their supervisor prior to preparing their presentations.

Sessions will be held concurrently, grouped by field, attended by Faculty and other department members. Project students must attend the entire session. Attendees will grade presentations.

First Written Report:  10% of final grade (along with performance evaluation)
A written Introduction is due by the end of December (see Schedule) and will be submitted via the OWL HSP Project site. It should be up to 3 pages long (double spaced), plus references. It should provide an introduction to your project, state your research questions, and summarize your proposed experimental approach. This Introduction and your progress to date in the lab will contribute to your December evaluation by your supervisor.

Final Written Report:  50% of Final Grade
Final reports are due at the end of March/early April (see schedule for exact date) and will be submitted via the OWL HSP project site. Late reports will lose 10% per day up to 3 days. Reports will not be accepted if more than 3 days late.

Reports are to written in the style of a research paper with an Abstract, Introduction, Methods, Results, and Discussion sections. Figures and legends should be prepared as if for publication and appended to the end. References should be handed appropriately. Specifics of content and style should be discussed with your supervisor.

Reports should be not longer than 20 pages, double-spaced, not including abstract, figures, and references.

An outline of your thesis is due to your supervisor approximately TWO WEEKS prior to the deadline (see schedule). Your supervisor can give you general feedback and guidance at this time, but can’t re-write your paper for you. It is also acceptable to get feedback from other colleagues in the lab.

After submission, your paper will be marked by at least two faculty that are not your supervisor, but that are familiar with the subject.

NOTE: A 1-page form (see attached example) stating the project start date and outlining your contribution to the presented research must be uploaded as a separate document to the OWL site.

NOTE: We will have a lecture specifically on writing your report early in the winter semester (see Schedule).
Second Oral Presentation: 12% final grade
The final oral presentation will occur the week after the written report is due (see schedule). It should be no longer than 20 min, followed by 10 min for questions. Presentations that go over this time will be cut off. Students should present an introduction to their project, rational, research question(s), and results from the year. Slides should be prepared in PowerPoint or similar. Students should discuss details of content and form with their supervisor prior to preparing their presentations.

Sessions will be held concurrently, grouped by field, attended by Faculty and other department members. Project students must attend the entire session.

Final Performance Evaluation: 20% final grade
At the end of the course, your supervisor will evaluate your overall performance in the lab. This will be based on your commitment, effort, initiative, overall understanding of the project and intellectual contribution and performance. This will in part be based on the THESIS OUTLINE that you submit to your supervisor after Reading Week.

Final Note on Evaluation:
Keep in mind that different projects can have very different types of outcomes. Negative results are common, especially in short time frames such as this course. Sometimes experiments just don’t work. The excitement of the projects that you are undertaking is that you and your supervisor don’t know what the outcome will be, and therefore evaluations are not based necessarily on how much data is produced. All faculty are experienced in what kind of effort is required for any given type of project and this will be taken into consideration at all levels of evaluation.

If problems arise in your project or lab, discuss it first with your supervisor. If this does not resolve the issue, contact your course coordinator.
HSP Presentations  
October XX, 2017  

Student Evaluators  

This package contains the evaluation forms for all presentations. Take it with you if you move to another room and turn it in to the Chair at the end of the last session.

You are encouraged to make a critical evaluation for each talk.

Signature__________________________________________  

Name (print) ______________________________________
### HSP First Oral Presentations - Student Evaluations

**Room:** HSA 62  
**Date:** October 21, 2016  
**Chair:** Dr.

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BIOCHEMISTRY / MICROBIOLOGY & IMMUNOLOGY / ANATOMY & CELL BIOLOGY Project Course

DECEMBER STUDENT EVALUATION REPORT

The purpose of this evaluation is to provide early feedback to students regarding their progress and to offer them the opportunity to improve their research skills over the remaining time in the course. This is also an opportunity for supervisors to go over their mark with the students, pointing out areas that need improvement. This evaluation is worth 10% of the student mark.

Note that this evaluation will be released to the student. Confidential comments (if necessary) should be emailed directly to the course coordinator.

The following categories should be used as a marking guide and to provide feedback to the student. Please add your comments to this document under each heading.

_/40 December paper: quality of writing and demonstration of understanding of the project
_/10 Understanding: background knowledge of the project and of methods used.
_/20 Time and effort spent in the lab: a minimum of 15hrs per week is expected, on a schedule negotiated between the student and supervisor. Time in the lab is spent efficiently.
_/10 Quality of lab work: learning required skills at an appropriate rate. Performing work carefully, and in an organized fashion.
_/10 Record Keeping: organized, clear, up-to-date lab book.
_/10 Progress to date: evidence of appropriate early progress

Additional comments:

Mark: /100

Once filled out, attach this document to the student’s December Report using the “Add Attachments” button at the bottom of the student’s Assignment page on the HSP Project OWL site (due January 31st).
HONORS PROJECT COURSE FINAL THESIS
STATEMENT OF CONTRIBUTION

Student Name: ________________________________
Supervisor(s): ________________________________
Supervisor’s Department: ________________________________

Please fill out this form and submit as a separate document along with your thesis via the OWL Assignments page.

Project Start Date: ________________________________

Briefly – what contribution did the above student make to the data presented in this manuscript?

(For example: student performed all experiments for Figures 2 and 3, and contributed to experiments in Figure 1)

List Figures or Data presented in this manuscript supplied by someone else:

(For example: Figure 1a generated by Grad Student x)

Signatures:
Student Signature: ________________________________ Supervisor Signature: ________________________________

Date: ________________________________ Date: ________________________________
The purpose of this independent research project is to acquaint students with how research is carried out, to expose them to multiple techniques, and practice problem solving. In marking the final report, emphasis should be on the above factors rather than on the completion of the project or obtaining particular result. The reports are to be in the form of a scientific paper appropriate to the field. The final report is worth 50% of the student’s final mark for the course and will be calculated by averaging the grade assigned by (at least) two readers.

Note that this evaluation will be released to the student. Confidential comments (if necessary) should be emailed directly to the course coordinator.

The following categories should be used as a marking guide and to provide feedback to the student. Please add your comments to this document under each heading.

__/20 Form: including spelling, grammar, quality of figures, organization, quality of references etc.

__/20 Content – Introduction and Abstract: sufficient and appropriate to understand the aims, appropriate reference to the literature. The problem, hypothesis, or research question is clearly stated. Abstract is appropriate.

__/20 Content - Methods: sufficient explanation to allow a knowledgeable reader to repeat the experiments.

__/20 Content - Results: clear, logical exposition/explanation of results obtained, evidence of reasonable accomplishments given the time spent, evidence of systematic approach

__/20 Content - Discussion: Depending on the nature of the project could include: discussion of data quality, implications of the results and conclusions that can be drawn, limitations of methods, further experiments needed/possible: should demonstrate an understanding of the results and their place in the scientific field.

Final Mark:__/100

Thank you again for this important contribution to the course.
Once filled out, attach this document to the student’s Thesis report using the “Add Attachments” button at the bottom of the student’s Assignment page on the HSP Project OWL site (due April 16th).
BIOCHEMISTRY / MICROBIOLOGY & IMMUNOLOGY / ANATOMY & CELL BIOLOGY Project Course

FINAL STUDENT EVALUATION REPORT

The purpose of this independent research project is to acquaint students with how research is carried out, to expose them to multiple techniques, and practice problem solving. Therefore, emphasis should be on the above factors rather than on the completion of the project or obtaining particular result. The final thesis is evaluated separately by independent readers. This evaluation by the supervisor is worth 20% of the student’s final mark for the course.

Note that this evaluation will be released to the student. Confidential comments (if necessary) should be emailed directly to the course coordinator.

The following categories should be used as a marking guide and to provide feedback to the student. Please add your comments to this document under each heading.

_/20  Problem solving: analysis, logic, creativity, systematic approach

_/20  Effort: initiative, motivation, time commitment

_/20  Record Keeping: organized, clear, up-to-date lab book.

_/20  Understanding: background knowledge of the project and of methods used. In part as demonstrated in the FINAL REPORT OUTLINE turned in February.

_/20  Progress: accomplishments appropriate to the project, difficulty, and student’s stage of training.

Additional comments:

Final Mark: _/100

Once filled out, attach this document to the student’s Thesis report using the “Add Attachments” button at the bottom of the student’s Assignment page on the HSP Project OWL site (due April 16th).