Project Course Coordinators:

Dr. Hong Ling (hling4@uwo.ca - Room 334 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
## 2016 - 2017

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<tr>
<th>DATE</th>
<th>TIME</th>
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<tbody>
<tr>
<td>1-Sept-2016</td>
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<td>Deadline for research project pre-matching</td>
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<tr>
<td>8-Sept-16</td>
<td>3:30 - 4:30 pm</td>
<td>MSB 384</td>
<td>Meet with all students. General course information</td>
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<tr>
<td><strong>Sept 8-16</strong></td>
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<td><strong>STUDENT/FACULTY INTERVIEWS</strong></td>
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<tr>
<td>12-Sept-16</td>
<td>2:00 - 5:00 pm</td>
<td>DSB 3008</td>
<td>Lab Safety</td>
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<tr>
<td>13-Sept-16</td>
<td>3:00 - 6:00 pm</td>
<td>DSB 2016</td>
<td>Bio Safety Training</td>
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<tr>
<td>14 Sept-16</td>
<td>2:00 - 4:00 pm</td>
<td>DSB 3008</td>
<td>Animal Safety Concepts</td>
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<tr>
<td><strong>16-Sept-16</strong></td>
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<td><strong>DEADLINE TO SUBMIT PROJECT CHOICES ONLINE @4:00 PM</strong></td>
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<tr>
<td>19-Sept-16</td>
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<td><strong>RESEARCH PROJECTS START</strong></td>
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<tr>
<td>27-Sept-16</td>
<td>2:00 - 3:00 pm</td>
<td>MSB 193 C&amp;D</td>
<td>Graduate Studies Info Session for Biochemistry</td>
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<tr>
<td>29-Sept-16</td>
<td>2:00 - 3:00 pm</td>
<td>MSB 193 C&amp;D</td>
<td>Graduate Studies Info Session for M&amp;IM</td>
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<td>14-Oct-16</td>
<td>2:30 – 5:30 pm</td>
<td>MSB 384</td>
<td>Ethics in Research Presentations</td>
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<tr>
<td>21-Oct-16</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-16</td>
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<td><strong>DEADLINE for December report</strong></td>
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<tr>
<td>16-Feb-17</td>
<td>3:30 - 5:30 pm</td>
<td>MSB 148</td>
<td>Guidelines for final report writing</td>
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<tr>
<td>27-Feb-17</td>
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<td><strong>DEADLINE to submit THESIS OUTLINE to supervisor for discussion</strong></td>
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<tr>
<td>3-Apr-17</td>
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<td><strong>DEADLINE TO Submit PROJECT REPORTS online in OWL @8:00AM</strong></td>
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**NOTE:** THIS DEADLINE CANNOT UNDER ANY CIRCUMSTANCES BE EXTENDED

| 7-Apr-17    | 1:00 to 5:30 pm | 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 to your supervisor by the end of December (see Schedule). This 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) in the Biochemistry office. 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.

You are expected to get your report to your supervisor TWO WEEKS prior to the deadline for feedback. 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 stating the project start date and outlining your contribution to the presented research must be appended to your report.

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 First Oral Presentations - Student Evaluations

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

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<th>Organization</th>
<th>Rationale/Objectives</th>
<th>Presentation Skill</th>
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- **Background:**  
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- **Rationale/Objectives:**  
- **Presentation Skill:**  
- **Response to Questions:**  
- **Total:**
# HSP Final Presentations - Student Evaluations

**Room:** HSA 62  
**Date:** April 7, 2017

**Chair:** Dr.

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**Evaluations out of 20**

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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.

Please discuss this evaluation with your student.

The following categories can be used as a marking guide and to provide feedback to the student.

_/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: leaning 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

PLEASE return this evaluation via the OWL SITE DROP BOX by January 31th 2017.
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 report is evaluated separately by independent readers. This evaluation by the supervisor is worth 20% of the student’s final mark for the course.

The following categories can be used as a marking guide.

_/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 Feb 27.
_/20  Progress: accomplishments appropriate to the project, difficulty, and student’s stage of training.

Additional comments:

Final Mark: _/100

PLEASE return this evaluation via the OWL SITE DROP BOX by APRIL 10th 2017.
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.

The following can be used as a marking guide and to provide feedback to the student:

__/20  **Form:** including spelling, grammar, quality of figures, organization

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

__/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**

Thanks again for this important contribution to the course.

**PLEASE return this evaluation via the OWL SITE DROP BOX by APRIL 10th 2017.**

If you have any **CONFIDENTIAL COMMENTS** for the **Course Coordinator**, please add them below:
HONORS PROJECT COURSE FINAL THESIS
STATEMENT OF CONTRIBUTION

Select course: 
Student Name: ____________________________________
Supervisor(s): ____________________________________
Supervisor’s Department: ____________________________

Please fill out this form, print it, and attach with signatures to the front of your final thesis paper.

Project Start Date: ________________________________

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

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

Signatures:
Student Signature: _____________________ Supervisor Signature: _____________________
Date: ___________________________ Date: ___________________________