Department of Earth Sciences - Undergraduate Research Project Registration Form ESS491H - Spring Term

# Expectations

## Students:

You should plan to spend at least one full day of uninterrupted time per week on your undergraduate research project (URP). The department strongly advises you against embarking on a URP if you already carry a full course load. You are expected to work independently, i.e., do not wait for your supervisor to motivate you. The onus is on you to keep the project moving. If you run into problems, or get stuck, it is you who must approach your supervisor (but see below). Students are advised to keep a copy of the signed form to track the progress of their research.

## Professors:

While students are expected to work independently, it is you who has to provide guidance and training. This includes - but is not limited to - training in the lab, guidance in scientific reasoning and literature, and most important guidance in scientific writing. Professors need to be willing to meet at least weekly with the URP student, and to be available to the student in case he/she needs support. Professors are advised to keep a copy of the signed form to track the progress of their student’s research.

## Students and Professors

If you feel that your project is not progressing as expected, please seek advice and support early on and convey your concerns to the Associate Chair Undergraduate Affairs ([ugradchair@es.utoronto.ca](mailto:ugradchair@es.utoronto.ca)).

Note that the department needs to approve the thesis project, and will then register the student into this course. Students are encourage to attend the thesis writing workshops offered for 492Y and are encouraged to take advantage of the writing support offered by UofT (see <http://www.writing.utoronto.ca/> for more information).

Note that students in the half-year project are still required to give a presentation to Department at large together with the presentations for the full year course.

## Student name:

## Student number:

## Student email:

## Supervisor name:

## Supervisor e-mail:

## Provisional Thesis Title:

## Description of General Student duties:

## Description of what training will be provided, i.e., which techniques/methods (beyond the soft skills like writing and critical thinking):

## Deliverables and milestones by the student

Deliverables for the Department:

|  |  |  |
| --- | --- | --- |
| **Date** | **Type** | **Achieved on** |
| TBD | Workshop attendance |  |
| February 01 | Reading List + 1 page research proposal |  |
| March 15 | Four page summary |  |
| April (TBD) | Thesis presentation |  |

Deliverables as agreed upon with supervisor

|  |  |  |
| --- | --- | --- |
| **Date** | **Type** | **Achieved on** |
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## Deliverables and milestones by the professor

Please add any other relevant milestones/deliveries as well.  
  
With the exception of the bold entries, dates can be adjusted

|  |  |  |
| --- | --- | --- |
| Date | Type | Achieved on |
| **April 18th** | **Submission of student grade** |  |
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## Mutually agreed upon meeting Schedule

We strongly suggest that you agree on a weekly meeting schedule (e.g., every Friday at 10AM), and enter the dates below.

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| --- | --- | --- |
| Number | Date scheduled | Actual date |
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## Marking Scheme

The grey background denotes the departmental components. The thesis mark from the supervisor consists of 50% of the mark. Please note there is a 5% per day penalty for late submission of work.

|  |  |  |
| --- | --- | --- |
| Element | Due Date | Weight |
| Workshop participation | TBD | 5% |
| Reading list & 1 page research proposal | February 01st | 10% |
| Four page summary | March 15th | 10% |
| Presentation | April (TBD) | 25% |
| Thesis Mark from Supervisor | April 5th | 50% |

## Thesis guidelines:

### Goal

The purpose of the fourth-year research project is threefold. First, you carry out your own independent research under the supervision of a faculty member. Second, you demonstrate your skills as a scientist and a writer by preparing a written report of your work complete with analysis and discussion. Third, you present your work in a seminar at the end of the academic year, which will demonstrate your ability to orally convey your research results. Your work will be kept on record in the department as a journal of extended abstracts, produced from all the 4th year projects from a given year.

### Structure

In order to complete the course, you must produce two written documents, as outlined below, and an oral presentation.

#### Part 1: Reading List + 1 page research proposal

Your reading list must be a complete list of all articles, books, etc, that you will be reading for your literature review. Your 1 page research proposal should clearly identify your key research question(s) and the gap in the body of knowledge you are trying to fill.

#### Part 2: 4-page Summary

This summary is a very concise version of your final paper, and it includes both figures and references. It should be divided into sections in a similar manner to your research report. It should include at least one (with a maximum of two) figures, and your most important references (to a maximum of 10).

#### Part 3: Research Report or Paper

Your research report is the major component of this course. This report differs from term papers you have written before because it focuses on presenting original data which you will then interpret. While there will be significant variation in the structure of each report because of the wide array of questions students have chosen to study, certain conventions in formatting and organization are universal. Your paper should include (at a minimum) five sections: an introduction, a description of methods, a report of results (what you observe), analysis of results (your interpretation of what you observe), and conclusions, as well as a complete list of all works cited. The type of research you are carrying out will determine how best to construct these five sections, but as a general rule, you should expect that 70% of your paper deals with the state of the art, and the remaining 30% describe your own thoughts. Please keep in mind that your audience is anyone with the knowledge level of your peers (senior undergraduates) up to experts in the field. This information should help you determine what level of detail is necessary to successfully answer the research question you outline in your introduction.

The length of your report, including figures and references should be about 20 to 25 pages (15 for a half-year project) without figures, tables and references (single spaced, 11pt Times New Roman, with at least 3cm wide margins top/left/bottom/right). Tabular data, or computer code etc should be included as appendices that follow the text, rather than included in the body of the report.

Unless you specifically arrange with your supervisor, your report should be formatted according to these formatting guidelines. In cases where it seems possible that something publishable will emerge from the study, the report may be formatted as a paper following the guidelines of the target journal.

#### Part 4: Oral Presentation

You will present your research orally on a date determined by the Associate Chair of Undergraduate Studies; this date is usually before the April exam period. Your presentation should be 15 minutes in length, with an additional 5 minutes allotted at the end for questions from the audience (depending on the number of presentation we have cut these times to 12 and 3 minutes). Organization of the talk is entirely up to you, but generally, one slide per minute is a good rule of thumb. The most successful oral presentations tend to be centered around figures rather than text.

## Formatting and Layout requirements

Your extended abstract has to follow the 4tyh year thesis formatting and layout requirements which are detailed in this guide.

[Writing and formatting guidelines or six techniques which will improve your writing](https://docs.google.com/document/d/196mAqkPON3zSBmn0taF_fWa0nqiEcjQyBL3QAblUxr4/edit?usp=sharing)

The same formatting and layout requirements apply to your thesis. However, your supervisor may require you to use a different layout. Please discuss this beforehand.

# Signatures

## **Professor**

I herewith acknowledge that I have read the above and that I understand that I have to meet with my student on a weekly basis. I also understand that the students have clear instructions on the formatting and layout requirements of the thesis. If you do not agree with these (see above), please provide your own requirements to the student.

### Name:

### Date:

### Signature:

## **Student**

I herewith acknowledge that I have read the above and that I understand that I have to work at least 8 hours per week on this project.

### Name:

### Date:

### Signature:

## **Departmental Coordinator**

### Scott Moore, received on:

### Signature:

## **Undergraduate Chair**

### Charly Bank, reviewed on:

### Signature:

## **Course Instructor**

### Tasca Santimano, reviewed on:

### Signature: