# EOSC 447
# B.A.Sc. THESIS, GEOLOGICAL ENGINEERING
# Thesis Guide September, 2009

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Course Coordinators: Sep 1, 2009 - Dec 31, 2009: Mary Lou Bevier, Office EOS South 156
Jan 1, 2010 - Aug 31, 2010: Uli Mayer, Office EOS South 256

## 1. PURPOSE AND SCOPE

The purpose of the Honours Thesis is to provide the senior undergraduate student with an opportunity to carry out a piece of independent professional work, under the guidance of a faculty member or another qualified individual.

The work carried out may include one of the following:

A. A detailed case history description of a geological process such as a landslide a flood or an earthquake and its real or potential impact on engineering development, including a consideration of possible remedial measures.

B. A detailed site reconnaissance report for a site containing an interesting engineering-geological problem, e.g. a landslide, or a location of building settlement, erosion, contamination or similar, including a consideration of possible remedial measures.

C. A detailed description of a design procedure followed at a real, or hypothetical project involving problematic engineering-geological or hydrogeological conditions.

D. A quantitative regional study of engineering geological conditions or the occurrence of a certain geological process which could have an impact on engineering developments.

E. An in-depth theoretical or experimental study of a specific engineering-geological problem.

Other themes, consisting perhaps of combinations of the above, could be considered. Ideally, the project should include components of field work, laboratory and analysis. However, we do not require each project to have all three components. There is no problem in using some experience gained during relevant summer employment, although you must provide an acceptable thesis and provide evidence of independent work.

The scope of the project is given by the credit weight of the course. Ordinarily, a 6 credit course should take about 4 to 6 weeks of full time work to complete and this is what you should allow for EOSC 447.

**NEW:** This year, it will also possible to work on group projects. This implies that a group of students can work together on a larger project that contains multiple facets of

geological engineering and is supervised by a single advisor. For example, a project may involve a variety of geotechnical and environmental aspects, as is often the case in mine planning, operation, and closure studies. This allows the students to interact in a team environment, as will be the case during future employment, and will also expose the student to a larger variety of topics. We envision group sizes of approximately 4 students, each of the students will focus on a specific topic of the group project, keeping in mind the impact of her/his project on the overall project. In practice, it will not be possible to provide group projects for all students, mostly due to a lack of advisors with suitable projects. As a result, each student will have to submit an individual thesis to be fair to other students who will have to complete individual thesis following the traditional format.

## 2. PROCEDURE

1) Select/identify a topic and make an agreement with a suitable supervisor. This may be a faculty member in EOS or another Department, or a professional outside the University.

2) Set up a work plan and get it approved by your supervisor, setting out milestones for completion (i.e. field work, analysis, report etc.)

3) Submit **Confirmation of Thesis Supervisor** form to the course coordinator (form attached).

4) Start work on thesis. Consult periodically with your supervisor (twice a month minimum is suggested) during the progress of your work. We strongly recommend to "write as you go."

5) Produce a one-page progress report briefly summarizing what you have accomplished for submission to the course coordinator (**Thesis Progress Report** form attached). **NEW:** This progress report will be graded and will be worth 10% of your mark. There will be penalties for late submissions.

7) Produce a **complete** draft thesis for review by the supervisor. Allow sufficient time for your supervisor to read the thesis and provide comments. Also allow sufficient time for you to address the comments made by your advisor. The schedule below allows for a 5 week window for review and completion of the thesis. You may want to ask your supervisor to provide comments within two weeks, which will leave you with the remaining three weeks to address the comments.

8) Finalize thesis and submit two copies of the final thesis: one to your supervisor and the second one to the course coordinator. At the same time, submit the **Completed Thesis Data Form** (attached) to the course coordinator.

9) Make sure the course coordinator can get in touch with the supervisor (through **Completed Thesis Data Form**).

## 2. DATES

Please mark the following important deadline dates:

| *Task* | **Deadline (Spring graduation)** |
|---|---|
| *Confirmation of thesis supervisor* | Oct. 9 |
| *Thesis progress report to course coordinator* | January 8 |
| *Draft of thesis to supervisor* | February 26 |
| *Submit final version of thesis to supervisor and thesis and Data Form to course coordinator* | April 2 |

## 2. SUPPORT

Thesis support in the form of Dept. services is available to the limit of $100 per student covering only the following services provided by the Department
Thin Sections, Microprobe analysis, Scanning electron microscope analysis, X-Ray fluorescence/diffraction, Machine Shop, Computer use.

Students must complete a thesis support form, have it approved by their supervisor then set up an account with the Senior Technician, Room 25, to receive support. Direct costs are not covered by the Department and must be paid by the student, the supervisor or an employer.

## 5. SUBMITTING A PDF OF YOUR THESIS TO UBC'S cIRcle

B.A.Sc. theses in the Department of Earth and Ocean Sciences may now be archived on the UBC Library's cIRcle (a digital Information Repository). Once your thesis is added to the repository, it becomes a citable publication with a specific URI.

**Directions:**

1. Once you have a final corrected copy of your thesis, create a pdf file of it using Adobe Professional. (If you do not own a copy of Adobe Pro( issional), ask your thesis advisor. Most supervisors will have this program and it is a simple matter to convert a Word document to a pdf file.)

2. Copy and paste the following text into an email message to Kevin Lindstrom, the Science and Engineering Reference Librarian:

> I authorize the deposit of the item(s) listed below into cIRcle. I have read and agree to cIRcle's Non-Exclusive Distribution License as presented on:
> http://www.library.ubc.ca/circle/Non-exclusive distribution license.pdf

This license covers the following item(s):

[Add the following bibliographic detail(s) for the items that the license covers here: *Author(s), Title, Copyright Owner(s), Publication Details (if previously published)*]

3. Attach your pdf to the email message, and send it. The Science and Engineering Reference Librarian at UBC will upload your thesis to the web shortly thereafter, and you will be a published author! Congratulations!

**6. CONTENTS OF THE THESIS**

The contents will differ with the type of topic. As a minimum, the following is required:

**Abstract** - approximately 1/2 page summary of all important findings

**Table of Contents** - with page references

**List of Figures and Tables**

**1. Introduction** - statement of purpose and scope of work

**2. Study Area** - (where applicable) location, topography, climate, bedrock geology, surface geology, drainage, vegetation

**3. Literature Review** - with appropriate references

**4. Methods** - what was done, how was it done, fieldwork, lab tests, analysis etc.

**5. Results** - details of all results

**6. Conclusions** - a list of all findings and results, including discussion of any remaining problems or limitations

**7. Recommendations for Further Work**

**Acknowledgements**

**List of References**

Examples:
- *Book:*
Bell, F.G., 1993. Engineering Geology., Blackwell Scientific, 1993, p. 120.
- *Journal:*
Boulton, G.S. and Paul, M.A., 1976. The influence of genetic processes on some geotechnical properties of glacial tills. Quarterly Journal of Eng. Geology, 9:159-170

- *Conference:*
Hutchinson, J.N. 1992. Landslide hazard assessment. *In* Procs. 6th. Interational Symposium on Landslides, D.H. Bell (editor). Christchurch, N.Z. 2: 1805-1842.

**Appendices** - Supporting data not necessarily to be read with the body of the thesis. These include numerous test results, detailed measured sections, etc.

## 7. OTHER HINTS

Please note the following more detailed information on some aspects of the thesis:

- Title: Should give the details of location and subject.
  Poor: "South Dansey Property"
  Good: "Economic Geology of the South Dansey Property, Highland Valley, Southern British Columbia"
- Paper: 8.5x11
- Type: Times Roman, 12 pt., double-spaced
- Margins: Left 13/4". Right 11/4", Top 1", Bottom 1"
- Page numbers: bottom centre of page.
- Abstract: The abstract should be 250 words or less and is to be bound in with the remainder of the thesis.
- Headings of subdivisions should be numbered, and bold or capitalized e.g. :

**1. CHAPTER HEADING**

**1.1 Section heading**

**1.1.1 Sub-section heading (if needed)**

- Sections or sub-sections should be indented as necessary.
- Tables: Numbered consecutively (e.g. Table 3), or by section ( e.g. Table 3.2, if many)
- Figures: Line drawings and photographs, numbered in the same way. Maintain same margins as for text. Remember to include maps properly numbered "in pocket" if that is where they are located.
- Maps: Use an appropriate scale with adequate margins, do not forget a detailed legend, scale, location map and North arrow.

REMEMBER: Neat, coherent presentation is very important to your success in this course and later in practice. Please ask your supervisor for an example of a well completed thesis to look at. A typical thesis has about 50 pages of double-spaced text. The next four pages give the required forms to be returned and a sample thesis title page:

**EOSC 447, THESIS**
**Confirmation of Thesis Supervisor**

**(PLEASE PRINT)**

Date: _____

Name: _____

Student No.: _____

Contact: telephone _____

e-mail _____

**Thesis Supervisor:** Name: _____

Address: _____

E-mail: _____

Telephone: _____

Signature: _____

Fill out in duplicate in consultation with your thesis supervisor. Have your supervisor sign both copies, keeping one copy, and leave the other in your course coordinator's (Mary Lou Bevier) mail box.

1. Approximate thesis title:

2. Outline of thesis problem:

**EOSC 447, THESIS**
**Thesis Progress Report (10% of final grade)**

Date: _____

Name: _____

Student No.: _____

Contact (telephone and/or e-mail number): _____

Fill out in consultation with your thesis supervisor, have your supervisor sign and leave the completed form in your course coordinators's mail box.

1. Brief statement of progress (use up to one additional page):

2. Do you plan to meet submission deadlines for spring graduation?

_____ Yes _____ No

Thesis Supervisor Name: _____
Tel. or e-mail: _____
Signature: _____

SAMPLE THESIS TITLE PAGE
(TITLE: LIKELY 2 to 3 LINES)

by

Your Name

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

BACHELOR OF APPLIED SCIENCE

in

THE FACULTY OF APPLIED SCIENCE

(Geological Engineering)

This thesis conforms to the required standard

……
Supervisor

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

MARCH 2010

**EOSC 447, THESIS**
**Completed Thesis Data Form**

Date of submission: _____

Student Name: _____

Student No.: _____

Contact (telephone and/or e-mail number): _____

Supervisor: _____

Supervisor Tel. or e-mail

Thesis Title:

Number of pages:

Study area location (country, locality, NTS number etc.):

Thesis keywords (a collection of about 5-10 carefully selected words or terms that describe the subject of the thesis):