Requirements Engineering
Spring 2004

Instructor

Prof. Steve Easterbrook
Office: BA5234
Email: sme@cs.toronto.edu
Phone: 416-978-3610

Course Web Page: http://www.cs.toronto.edu/~sme/CSC2106S/

Course Objectives

1. Examine the state-of-the-art for research & practice in Requirements Engineering.
   - Role of RE in software and systems engineering
   - Current techniques, notations, methods, processes and tools used in RE
2. Gain practical experience in selected RE techniques
3. Understand the essential nature of RE
   - Breadth of skills needed for RE, and the many disciplines on which it draws
   - Contextual factors & practicalities that affect the success of various approaches to RE
4. Gain a basic grounding for research in RE
   - Methodological issues for RE research
   - Current research issues and the direction of the field
   - Awareness of the literature

ARISE video-conferencing

For 2004, the course is offered as an ARISE video-conferenced course, at the Universities of Toronto, York, Waterloo and at the IBM Toronto Lab. Enrollment may be limited at some of these sites – please check with your local graduate coordinator. Because of differences in the graduate course structures, the course number and title at some sites is different:

Toronto & York: CSC2106 – Requirement Engineering
Waterloo: CS846 – Advanced Topics in Software Design: Requirements Engineering

For information about ARISE, please see: http://www.softwareresearch.ca/

Seminars

There will be one 3-hour seminar per week. Each seminar will consist of a mixture of lecture material, discussions about the weekly readings, and student presentations. We will not always use the full three hours.

Times:	Wednesdays, 2pm to 5pm.
Dates:	The first seminar will be on Wednesday January 7th, 2004.
	There will be no seminar on February 18th (Reading Week)
	The last seminar will be on April 7th
Locations:	U of Toronto: Bahen Center, room BA7231
	U of Waterloo: the FlexLab, LIB 329
	York University: Stedman lecture hall, 120E
	IBM Toronto Lab: Y4-021

Books & Readings

There is no textbook for this course. Although there have been many books published on RE in the last few years, no single book covers the field adequately, although several are excellent on the particular areas they cover. We will

discuss some of these books during the course. Rather than use a textbook, we will use a series of research papers as the core readings for the course. These will provide us with a better overview of recent research.

Each week there will be several papers to read. These will be available on the course website. Please read the papers **BEFORE** the seminar, and come to the seminar prepared to discuss what you have read. These discussions form a core part of the course, so it is important that everyone comes prepared. Each week, one or two students will be assigned to lead the discussion.

Assessment

The assessment for this course is as follows:

Term Paper A (Literature Survey): 40%
This should be a survey of research in some particular area of RE. You should discuss your choice of topic with me before you start work on your survey. There are several ways to tackle this assignment. For example, you could choose two or three papers describing different research projects that have tackled a similar problem, and write a detailed comparison of them. Or you could choose a larger set of papers that cover the topic, and write an overview, discussing both what has been achieved and what remaining problems there are. Other approaches are possible – I'm happy to discuss your ideas and give you feedback along the way.

Term Paper B (Practical Project): 40%
This should be a practical application of some method in RE. You can choose any method or tool, whether covered on the course or not (although check with me for relevance first!). If the method has an associated tool available, we will try to get hold of the tool for you to try out. If you wish to use a commercial tool, we may be able to get an evaluation copy or an academic license. The project could be a real project (e.g. elicit requirements from some real stakeholders), a reconstruction of a case study described in the literature, or a toy example. I will help you choose a project that is appropriate for the method that you wish to apply.

Oral Presentation: 10%
In one of the seminars, you will give a ten minute presentation, in which you describe the work of *one* of your two term papers. These will be scheduled in the second half of the term. The presentation can cover work in progress for a term paper that you have not yet completed, if you wish.

Class discussion: 10%
During the term, each of you will be asked to lead a discussion on one of the course readings. For this, you should prepare a short oral summary (5-10 minutes) of the paper, and create some discussion points to lead the class discussion (e.g. one transparency). The discussion points could be any thoughts you have about the paper, such as anything you think is controversial in the paper, comments about research methodology, questions about things that are unclear in the paper, ideas for follow up research, strengths and weaknesses of the paper, etc. Try to choose open ended questions/issues that will provoke some class discussion.

Note
The two term papers can be tackled in any order, although I suspect that for many of you, the literature survey may be an important step towards choosing a suitable practical project. You may link the term papers with your thesis work if you wish, as long as the papers are relevant to the course. You will be expected to use the IEEE conference paper submission format for both term papers, and both papers are limited to 10 pages (excluding appendices).
I will provide more detailed guidance on each of these assignments during the course.

Deadlines

The first term paper will be due the week after reading week (i.e. by February 25, 2004).
The second term paper will be due one week after the last class of term (i.e. by April 14, 2004).
Note that you can tackle the two term papers in any order.
Your oral presentations and class discussions will be scheduled as the course proceeds.