

# **60-510 Background Reading**

**Instructor : Dr. Frost (rfrost@cogeco.ca)**

**course web site: [cs.uwindsor.ca/richard/cs510/index.html](http://cs.uwindsor.ca/richard/cs510/index.html)**

**Winter 2015**

## **Purpose of the Course**

The purpose of this course is to prepare students for conducting the specific research on which their thesis will be based. An additional objective is to help students to develop literature research and technical writing skills.

Students will conduct a survey and **write a SURVEY REPORT (not a monograph)**. It is important that the survey is COMPREHENSIVE. This means that the subject must be sufficiently narrow that there are no more than **20** research papers worldwide on the subject. Students **MUST NOT COPY** any material without using quotes and appropriate reference. The remainder of these notes will help students achieve these objectives.

REMEMBER that you are to write a SURVEY OF RESEARCH not a book. There is no need to begin with definitions and examples. Concentrate on explaining what the researchers have contributed to the subject, and what, if any problems remain to be solved.

## **Schedule of Activities**

Students should keep a log book recording progress and recommendations made by the instructor. If the student's progress as stated in the log book is unsatisfactory at any time, the student may be asked to withdraw from the course or be given a failing grade.

The next page contains an approximate schedule of tasks to be undertaken by the student from week one to week 12:

*Week1.* **Think about survey title. Discuss this with your research supervisor and with the instructor for 60–510 and start looking for references** Your survey should be relevant to your potential thesis research area. The topic should be narrow enough so that **there are no more than 20 research papers on your topic.** You may need to change the survey title as you begin to identify relevant papers. **Assignment#1 due the following Wednesday includes student name, supervisor, area of Master's/Doctoral research, and a possible topic for survey.**

*Week2.* Introduction and discussion of use of electronic access to the library. **Assignment#2 due the following Wednesday: includes a tentative topic for survey.**

*Week3.* Discussion of survey topics. **Assignment#3 due the following Wednesday: includes a final topic and lists of search terms, papers returned, exactly-on-topic papers, and extra papers found by looking at citations.**

*Week4.* Review of progress on bibliography, intro to Latex, and discussion of annotation format. and possible further revision of survey titles. **Assignment#4 due the following Wednesday: includes a list of all exactly-on-topic paper references in the ACM Surveys format (see example survey on the course website), 10 most-important papers with reasons for choice, and one annotation for one exactly-on-topic paper.**

*Week5.* Discussion of final survey titles. **Assignment#5 due the following Wednesday: includes a revised annotation.**

*Week6.* Discussion of annotations. **Assignment#6 due the Wednesday two weeks later (owing to Study Week) : includes draft annotations of 3 more most-important papers.**

*Week7.* Discussion of annotations. **Assignment#7 due the following Wednesday includes draft annotations of 4 more most-important papers.**

*Week8.* Discussion of annotations. **Assignment#8 due the following Wednesday: includes Students to submit 2 remaining draft annotations, and grouping of papers, and contents page with section headings and sub-headings.**

*Week9.* Discuss students progress.

**Assignment#9 due the following Wednesday, includes writing introduction.**

*Week10.* Discuss student progress.

**Assignment#10 due the following Wednesday: includes a draft survey contents of about half of the survey - 5 of the papers**

*Week11.* Discussion of Draft Contents.

**Assignment#11 due the following Wednesday: includes draft contents of the remaining 5 papers.**

*Week12.* Discussion of Draft Submissions.

**Assignment#12 due the following Wednesday: includes a draft of the survey with conclusion.**

*Week13.* Discussion of Draft Submissions.

**Assignment#13 due the following Friday: submit final draft of survey.**

**The final version of the survey must be submitted no later than one week after the end of the semester.**

### **Survey Title/Topic**

The survey topic should encompass the subject of the students' thesis. The survey title/topic is to be chosen by the student after discussion with his/her research supervisor and also with the instructor of this course. The title may be revised up to the third week of the semester, at which time it will be finalized. Note that the final title requires approval by the instructor of this course. The topic should be sufficiently specific to enable the student to conduct a comprehensive survey. Students will be expected to identify nearly all accessible references that exist.

**START WITH A HIGHLY-SPECIALIZED TOPIC AND THEN MAKE IT MORE GENERAL IF NECESSARY.**

### **The Bibliography**

The final bibliography should include at least 20 references. 10 of these should be identified as the most important papers and should constitute the basis of the main text of the survey.

## **The Annotations**

You need to write an annotation for each of the 10 important papers. The annotation should be structured as shown on the next page, with only a few sentences under each heading. Note that past tense is used to describe experiments etc. which the authors conducted, but PRESENT tense is used to describe what the authors say in their paper. **Each annotation must have 9 headings as given in bold font below:**

1. **The problem which the researchers/authors addressed.** (Not what they created, but the overall problem which they tried to solve). (Note past tense).
2. **A list of previous work by others** which attempted to solve the same problem and which the authors refer to (note present tense).
3. **Shortcomings of previous work** that the authors refer to (state that no shortcomings of previous work were mentioned by the authors if they did not do so). (Note present tense).
4. A short description of **the new idea, algorithm, architecture, protocol**, etc. which the authors invented (past tense) and which they describe (present tense) in the paper. If no new idea etc was invented, what new experiment, analysis did the authors conduct.
5. **Experiments and/or analysis** of the new idea, algorithm, architecture, protocol, etc.
6. **Results that the authors claim to have achieved.** (Note that you must state that the authors "Claim to have ...".
7. **Claims made by the authors** with respect to the contribution that they have made. For example, "The authors state that their new algorithm has better time complexity than any known algorithm at that time."
8. **Citations to the paper by other researchers** (you will only be able to do this after you have completed all of the annotations).
9. **Other evidence of impact of the paper** (for example, use of the new algorithm in some commercial software).

## **The Survey**

Most surveys should approximate the following dimensions:

1. Text, approximately 5000 words long not including the abstract, diagrams, annotations or bibliography references.
2. Abstract, 100 words long (do not write the abstract or the introduction until you have written everything else).
3. Approximately 10 main papers should be used as the basis of the thesis, with approx 20 in the bibliography.

Surveys are usually structured as follows. Alternatives are acceptable with permission:

1. Title and author
2. Abstract
3. Introduction (one page describing how many papers identified, from where, who are the main researchers, and the structure of the rest of the survey. No need to explain the subject as you can assume that the reader is an expert).
4. Survey of Research :

4.1. Category I – YOU CHOOSE AN APPROPRIATE CATEGORY NAME

4.1.1. Subsubsection 1

4.1.2. Subsubsection 2, etc.

4.1.x Summary and table: (in ascending year order)

Year	Paper Title	Authors	Major Contribution
19xx	xxxxx	xxx	xxxxxxx
19yy	xxxxx	xx	xxxxxxxxxxxxxxxxx

4.2. Category II – YOU CHOOSE AN APPROPRIATE CATEGORY NAME

4.2.1. Subsubsection 1

4.2.2. Subsubsection 2, etc

4,2,x Summary of research and table: (in ascending year order)

Year	Paper Title	Authors	Major Contribution
19xx	xxxxx	xxx	xxxxxxx
19yy	xxxxx	xx	xxxxxxxxxxxxxxxxx

4.3. Category III - YOU CHOOSE AN APPROPRIATE CATEGORY NAME

4.3.1. Subsubsection 1

4.3.2. Subsubsection 2, etc

4.3.x Summary of research and table: (in ascending year order)

Year	Paper Title	Authors	Major Contribution
------	-------------	---------	--------------------

19xx	xxxxx	xxx	xxxxxxx
19yy	xxxxx	xx	xxxxxxxxxxxxxxxx

5. Concluding Comments Research :

5.1. Summary of research and table (table contains all rows from the tables 4.1.x, 4.2.x, 4.3.x etc.

Year	Paper Title	Authors	Major Contribution
19xx	xxxxx	xxx	xxxxxxx
19yy	xxxxx	xx	xxxxxxxxxxxxxxxx

5.2. Future work identified by researchers surveyed

The number and content of the categories will depend on the milestone and important papers identified. You should choose the categories after you have completed the annotations. This will allow you to group the papers into categories and subsections. You can put one or more papers into each subsection. Do not use any more than three levels (i.e do not use 4.2.1.3)

**The contents of the category subsections should be derived from the annotations with some introductory comments to each category. You can begin by simply cutting and pasting the annotation into section 4.1.1, 4.1.2. etc.**

**It is important that the papers in each subsection be presented in date order. The subsections should be ordered by the date of the earliest paper in each subsection. The categories should be ordered by the date of the earliest paper in each category. This will give a chronological development of the subject.**

**The “Concluding Comments” section should have a “Summary” subsection at the beginning containing a table with four columns: Title of paper, Date published, Authors, Major Contribution. The papers should be listed in ascending date order.**

**IMPORTANT: The style of the writing, format of the references etc. should be the same as in the sample survey written by Dr. Frost which is available on the course website. Please note that all material submitted to Dr. Frost for review must comply with this ACM style and format. Dr. Frost will help improve grammar, but not spelling mistakes, and not formatting errors.**

## **Student evaluation of Course**

Student evaluation (SET) of the course will take place during the last two weeks of the semester.

### **IMPORTANT : Note on Plagiarism**

All references to other people's work **MUST BE EXPLICIT**. Direct quotes from other people's work must be in quotes with the source clearly referred to. Summaries of passages from other people's work must be described as such. For example: "This is a summary of Chapter X from the book Y by Z".

All diagrams, tables, and program code that is copied from other sources must have the reference and page numbered in the Figure caption (i.e. the name of the figure).

**THE SURVEY MUST BE WRITTEN IN THE STUDENTS OWN WORDS – NOT A COLLECTION OF EXCERPTS FROM OTHER SOURCES. ENGLISH GRAMMAR MUST BE THOROUGHLY CHECKED BEFORE MATERIAL IS SUBMITTED EITHER TO THE INSTRUCTOR OR THE STUDENT'S SUPERVISOR FOR REVIEW.**

**Students who fail to give due credit to other people's work will fail the course and in severe cases could be referred to the University Discipline Committee.**

### **Note re Assistance from Research Supervisor**

Throughout the duration of this course, students should maintain a dialogue with the professor who is to supervise their thesis work. However, in order that a fair assessment of student's performance in this course can be made, students must state which of the references, contacts, etc. that they have used were provided by their supervisor and which were found by themselves. It is important that students understand that in this course their evaluation will depend primarily on the extent to which they can demonstrate an ability to conduct and present the results of a survey of scientific research in a given area and not on the extent to which they can demonstrate an ability to conduct research in that area.

### **Evaluation Scheme**

Assessment of students taking 60-510 will be based on three components of the survey report. These will be weighted as follows:

Bibliography	30%
Annotations	20%
Survey body - main text	50%
STUDENTS WILL LOSE 2 MARKS FOR EVERY LATE ASSIGNMENT	POSSIBLE LOSS OF 20% - NOTE THAT the passing mark for a grad course is 70%

60-510 MARKING SCHEME (subtract 5 for each annotation less than 10,. For final, add 5 back if additional papers are added to make 10 annotations).

<b>SURVEY BODY - main text</b>	<b>50%</b>	
<b>Abstract</b> One of the major problems facing W is P. T is often used to solve P but T could be improved.. Various researchers have tried to solve P and improve or replace T. This survey is about their research	4	
Abstract – interesting sentence	1	
<b>Introduction</b> – scope of survey	1	
Introduction – why important	1	
Introduction – resources/search terms used	1	
Introduction – papers identified	1	
Introduction – papers used & reasons	1	
Introduction – structure of the survey	1	
Introduction - observations	1	
Introduction – technical style of writing	3	
<b>Appropriate section</b> and subsection headings	2	
<b>Introductory paragraph</b> at beginning of each section tying papers together	3	
<b>Tables at the end of each section</b>	5	
<b>Good conversion from annotations</b> to body of the survey (completeness)	5	
<b>ACM Format</b> – font size citation style, etc.	5	
<b>Concluding section</b> – identified x papers etc	1	
Concluding section – interesting observations	1	
Concluding section – table	1	
Concluding section – future work	2	
<b>Writing style</b> – technical style including correct refs (diagrams etc.)	3	
Writing style - clarity	3	
Writing style - Flow in writing – no repeats/not too many headings	4	
<b>BIBLIOGRAPHY</b>	<b>30%</b>	<b>MARK</b>
Appropriate search terms	5	
Comprehensive list of exactly-on-topic papers	5	
Appropriately-chosen 10 most important papers	5	
Bibliography in ACM Surveys format	5	
Bibliography complete details	5	
Choice of paper groupings	5	
<b>ANNOTATIONS</b>	<b>20%</b>	<b>MARK</b>
Correct bibliographic heading for each entry	1	
Problem	2	



Previous work	2	
Shortcomings	2	
New idea	3	
Experiment/analysis	3	
Results	3	
Claims made	2	
Citations to	1	
Other impact	1	