WRITING A THESIS

WHAT IS A THESIS?

Defining what constitutes a thesis is a difficult task, because there is no consistent view across the disciplines. In its most basic and general sense, a thesis is a research report. Another way to think about it is as a sustained argument. While the University's formal degree requirements need to be standardized to apply to the diverse range of disciplines, the way in which a thesis in the Department of English is written will be different from one written in the School of Architecture. Because there is no one model for a thesis, it is important to be familiar with the general terms of reference of a thesis for your particular discipline and degree. Your supervisor is an important resource here: (s)he should be able to give you clear advice about what examiners will be expecting from your work. Another way to get a good idea of what a thesis in your field is like is to have a look at one that has passed.

The Musagetes library and the Graduate Coordinator both keep copies of all **Masters thesis** produced by students at this School.

Discuss early on with your supervisor what(s) he expects of a thesis and check the formal requirements, such as word length and referencing system. Check out theses in the library. This is the best way to get an idea of what a thesis looks like.

ORGANIZING YOUR THESIS

As a guide, it has been suggested that the research proposal becomes the first four chapters of the thesis. However, this is not necessarily a recipe suitable for every thesis and I strongly recommend a meeting with your supervisor to discuss the structure.

The following list may help you when it comes to editing your thesis. They are questions designed to keep your thesis focused.

INTRODUCTION & STATEMENT OF THE PROBLEM:
- Is the problem stated both generally and specifically?
- Is the purpose of the study clearly stated?
- Are the questions or hypotheses stated?
- Does the reader understand the rationale for the study and its relation to theory?
- How does this subject matter related to the Profession of Architecture?
- Why is it important and why do you feel it needs to be address?
- What are the limitations
- Chapter outline – guiding reader through your study
- Is there a transition to the next section?

REVIEW OF THE LITERATURE:
- Is it a comprehensive review of research, theory concepts on the topic?
- Does it show that you have understood these concepts?
- Is the reader aware that the review is selective and the criteria for selection?
- Is there critical assessment of the literature?
- Does it review the relation between what has been done before and what is proposed in the current study?
- Does it have suitable headings?
- Is each section summarized?
- Are there transitions from one section to another?
- Is there a final summary that says why you are doing the study, including gaps in knowledge?

METHODS/PROCEDURE:
- Does it explain what was done to gather the information?
- Is it possible for someone to replicate your work based on your instructions?

- Is the research method used related clearly to a more general design known in the research methodology literature?
- If human or animal subjects are used, are they adequately protected?
- Are variables identified and described?
- Are controls (if used) explained in sufficient detail?
- Are apparatus or materials described, illustrated and history indicated?
- Is the setting of the study specified?
- Are directions or explanations given to participants included (if given)?
- Is debriefing necessary? If so, is it explained?

RESULTS:
- Does the reader learn how the raw data was summarized?
- Do tables contain all the essential information so they can be read without reference to the text?
- Does each table stand on its own, clear and self-explanatory?
- Are results grouped in relation to questions or hypotheses?
- Are incidental findings or unforeseen results reported?
- Is redundancy eliminated or minimized?
- Free from the interpretation of results?

DISCUSSION AND CONCLUSIONS:
- Are the meaning and importance of results indicated?
- Are conclusions drawn about each question or hypothesis?
- Are limits on conclusions specified?
- Are alternative explanations identified and discussed?
- Does the reader learn how successful the investigation was and what further study might need to be done?

REFERENCES:
- Correct format?
- Consistent format?
- Tables and figures labeled correctly?
- Footnotes used correctly?
- Are all the in-text references included in the end-of-text reference list?

APPENDICES:
- Does the labeling of appendices match the in-text labeling?
- Have you included appropriate material in the appendix?

CHOOSING A TOPIC

Start with a general area and refine it choose a topic without too much already written on it but remember it is helpful to have someone else's ideas to supplement your own be prepared to change your topic or its focus or your line of argument if your research makes this necessary – do not stick to a thesis which isn't working remember choose a topic which is manageable within the number of words and time available.

HOW DO YOU START?

Plan. Read. But, most importantly, *write*. What you **write** can be changed later, but you cannot change anything unless you have something to change. If your thesis is looming ahead of you, daunting in its size and scope, break it down into bite-sized pieces .Plot a chapter outline, then take a chapter and break it down again. **Write** a paragraph or a section about one of your subheadings, regardless of how rough a draft it maybe. Get some feedback from your supervisor.

The outline will help you organize your ideas, clarify your topic and formulate a plan of attack. Your outline and structure will probably change as you progress, but it is an essential step in the process. Some students find that writing papers for conferences or publications is a good foundation for building chapters (also a great way to get feedback on your research). Approaching your thesis as if it were pieces of a pizza rather than an entire banquet will defeat writer's block, and the small goals you achieve will encourage you to keep

going.

"When you are about to begin, writing a thesis seems a long, difficult task. That is because it is *a long, difficult task".*

A good way to warm up for writing is to do a <u>literature review</u>, which is a critical account of the existing work in your area. The purpose of the review is to gain an understanding of the agreements, disagreements and gaps in the research and to locate your own work in relation to this scholarship. However, while it is crucial to be aware of what has been done in your field of study, you can read *too* much and begin to feel that your own ideas are getting lost underneath those you are reading. Reviewing the literature is an ongoing process; do not approach your thesis by thinking you are going to read every word already written on your topic or you will never get started! Above all, remember that for most people writing is *not* easy. Even seasoned academics can still find it a difficult and often painful process. We all **write** differently - some people need to clarify their ideas before they **write**; others find writing facilitates their ideas. Whatever category you fall into, the key is practice. Just **write**!

Write a rough thesis plan to begin with; this will help provide the direction.
Write down some of the key texts you have to read and discuss the list with your supervisor.

WHAT IS A LITERATURE REVIEW?

Literature reviews are an integral part of a thesis or dissertation and there are many books that have been written to help students with this aspect of the research process. Certainly, this brief guide is not designed to replace those books but aims to give you a quick overview of literature reviews, tips for organizing literature reviews, and suggestions for organizing the other sections of your thesis.

It has been suggested in one source that the literature review "be written as if it were to be published as a separate manuscript. The thesis should not be regarded as a set of distinct sections; the thesis is a corpus, a whole, with each section representing different parts of the same body. Your thesis is a complete piece of work with each section making links to other sections; keeping this point in mind this will strengthen your thesis and its impact on the reader.

A literature review serves four main functions:

1. primarily focuses on what has been done before and is designed to highlight how   your study will fill the current knowledge 'gap'
2. outlines the instruments you will use and why
3. points out why it is necessary to conduct your research
4. sets the boundaries for your study (called delimitations).

CRITICAL EVALUATION:
Your literature review should include a critical examination of the material that you have read. There are many factors that you need to keep in mind when reading a piece of work. Factors such as the sample size, research design, measures used, biases, extraneous or confounding variables will need to be considered. Design a checklist that you can use as a template when evaluating written material. This will allow you to be consistent in your evaluations. Ask for input from your supervisor when designing it; you are required to reduce your own biases and a checklist is an effective way to do this. The critical examination allows you to furnish the necessary evidence to justify in what way your work is different to that which has been conducted previously and why is it necessary to conduct your current investigation.

Here are some questions to consider when examining the literature:

• How did the researcher conceptualize the problem?
• What were the assumptions?

• How is this research relevant to my study?
• How were constructs measured?
• How is it different to my study?

YOUR AUDIENCE:
Keep in mind your audience when you write the review and do not presume that they know what you do. When researching your topic, you will have immersed yourself (or overwhelmed as it may feel) in the subject so do not assume that even your supervisor or the committee is privy to the things you now know. On the other hand, there is no need to state the obvious. If you are not sure whether to include definitions, elaboration, or expansion on certain topics, ask your supervisor for feedback.

SCOPE:
When you begin your reading, do not over read; restrict the size of your reading to allow you to actually get on with the review. Read articles twice, the first to understand themes, and concepts; the second time, with a critical eye. You will be required to know a great deal about the topic (a mastery of the subject), but you may not have to write everything you know about it. You may be able to limit the scope of the review to include the current state of the theory as it stands to date. But, how far back is far enough? That depends on the level of your research, but a rough guide for a Masters thesis is about 10 years, unless a more extensive investigation is required, this last point being of particular relevance to doctoral students.

LENGTH:
The length of your review will vary as well as the format. Discuss with your supervisor what would be a suitable length rather than being verbose and less concise than you should be. The review should demonstrate your ability to synthesize a body of literature. It may be more preferable to have a briefer, more focused review, than a lengthy one. Whatever you decide, discuss this issue with your supervisor.

BEGINNING YOUR REVIEW:
Create a mind map of the concepts that you will discuss in your review, including key words and synonyms. As you review books and journals, write down the topic words that have been coined. Create a mind map of the all of the terms that apply to your topic before conducting a literature search. This mind map can then be used to guide your literature search as well as making sure that you discuss pertinent concepts in the review itself.

ORGANIZING LITERATURE REVIEWS:
The main attribute of a good literature review is that it is well structured. This point cannot be overstated. A good place to start, when organizing a review, is to look at other theses – but just make sure that you are looking at a good example of a thesis (your supervisor may recommend a few for you to look at). When examining these pieces of work, try to identify the structure and see how they have linked their ideas together. However, before you emulate what you have read, be aware that plagiarism extends to copying the structure of other's work, so please acknowledge any influences appropriately. In addition, to assist you in organizing your review, see your supervisor or department to identify the format of your thesis, as this can impact the organization of the literature review.

The information in the literature review is synthesized, or brought together to form a cohesive whole. Those who read the review should know what occurred in the past, the questions you are posing, and the procedures that have been employed. In addition, they should know the weaknesses of past studies and how your research contributes to this field in the advancement of knowledge.

BASIC COMPONENTS OF A LITERATURE REVIEW
It is recommended that the review exist as a separate chapter, which is most common where the research problem is defined early on and remains relatively unchanged. However, if the direction of the study

changes due to new research findings, then new literature may need to be included in subsequent sections. Even if your thesis is like the one described in the first situation, you will probably need to include relevant information throughout the thesis. That being acknowledged, here is an outline of the Literature Review section of a thesis:

GENERAL BACKGROUND INFORMATION OR INTRODUCTION
This section is most likely the longest section of the thesis. It includes:

Introduction:
The review begins with an introduction that discusses the topic, key concepts and terms, and describes the scope and organization of the review. You can use the two-topic format or the funnel format. Both formats include the identification of key topics that will be covered in the review. In addition, these formats guide the way the review is structured, which makes the writing of the task easier because you can focus on writing one section at a time and keep on track with your review topics.

Theory:
This section outlines relevant theories that impact your study. But, you may find it difficult to find information for this section, especially in 'new' fields of research. Still, even in ground-breaking research, there should be some foundation upon which your work rests. There may not be a strong link in this case, but it does help if there is some basis for your work, albeit indirect. Whatever topics you include in your review, it must bear some relationship to the topic. Though you may not find literature that specifically relates to your topic you should integrate key points from related studies that to allow you to make inferences and indicate what you expect to happen in your study.

Instruments:
This section is a review of the literature on the instruments or measures you will use as part of your study. You need to present evidence that supports your choice of instrument over those not chosen. This section should be focused on relevant literature specific to the study. One suggestion is to examine the most current instruments first and work back from there. You need to include reliability and validity estimates and a description of the samples that have received the instrument. When dealing with many variables, it is useful to write a separate section on each variable in the review.

Summary:
Basically, the summary is a précis of what has been written about in the chapter. It should not be verbose, or a repetition of the entire contents of that chapter, but rather a succinct account of the current state of knowledge on your topic and the instruments used in the study. In addition, there should be a sense that you have explained the background to your study that endorses the decision you have made to study your topic.

STRUCTURING YOUR REVIEW
Your review will not only synthesize the literature, but it must present the literature in a logical sequence or order. It is best to start your review moving from general concepts to the more specific concepts. Your aim is to indicate to the reader an understanding of the problem under investigation. You can organize your review by chronology, topic, type of research, or any method that makes sense.

To further expand on structure, this section will now suggest further ways to organize your sections or subsections for your literature:
- "What strategies enhance organizational effectiveness?" You can organize the review according to the strategy type.
- Cover studies that examine related dependent variables. e.g. "Characteristics of sustainable housing design". You could organize the review according to sustainable development, housing studies, design, and so on.
- Organize by type of design. The order usually moves from weaker to stronger designs. e.g. correlate before experimental designs.

- Organize by chronology. Particular theories may develop according to strict chronological changes perhaps due to technology, expansion of theories, or social changes, etc.
- Organize by theoretical premises. This is useful if you are dealing with competing explanations or when different theories contribute to your research question.
- Organize by findings. You may wish to use findings to develop a rationale for your studies. This can be the most difficult way to organize your review.

However you organize it, your review should highlight important aspects of the literature - especially areas that you wish to address or improve on. There is no single best way to organize your chapter, so do not waste precious time looking for it, just write it.

EFFECTIVE WRITING

Some writers cannot begin writing until they have a detailed outline consisting of their main point and every subordinate point, in the order in which they intend to make them. Other writers need an outline of some kind, but usually only of topics so that they know the parts of their paper and the order in which they want them to appear. Almost everyone profits from at least some kind of outline, which focuses their attention on particular aspects of their paper and in a particular order.

- write an essay plan
- keep your sentences reasonably short and limit each to one idea
- make sure you use words you clearly understand: when in doubt, keep it simple. Do not use five words where one will do
- be precise; make sure the words you use mean what you intend
- practice writing often and read good writers
- use an active voice, and when summarizing try to stick to the same tense.

ORGANIZING YOUR DATA

When you first start a thesis, deciding on a filing system may seem like an unnecessary chore taking you away from the real job at hand - your research. But you will be amazed at how quickly your research materials accumulate, such as photocopied articles, handwritten notes, references etc. both electronic and hardcopy. Deciding at an early stage on a way of arranging and storing these materials will make your research easier and more time-efficient in the long run, because you will know exactly where to look for everything you need. Whether you keep things in folders, a filing cabinet or index box, you need a system.

For organizing references, choose proper styles (i.e. APA, Chicago). Get into the habit of updating it regularly then your information will be at your fingertips and you will never suffer the pain and frustration of not being able to use an important quote or reference because you cannot remember who or where it came from.

An important note: always make back-ups of your electronic files. Many a postgraduate has regretted not completing this essential step after hard work has been eaten by a virus or inexplicably taken to cyber heaven. Keep your back-up files in a different location in case
of fire, thieves or other unforeseen circumstances (roof leaks!). An easy and hassle-free way to create back-ups is to send them by email.

REFERENCING

Referencing is critical in the writing expected at University level. Ideas, facts and opinions from others must be properly cited and referenced. If you do not know how to reference in your department, then you must find out quickly. The simplest method is to ask your supervisor or lecturer which system to use. There are several referencing systems in use throughout the University, but the most used are the APA System and Chicago Style. Just be consistent and pick only one style. **Write** down the basic reference sequence for

citations and the bibliography and put it on the wall in front of you in your study. Every time you forget the system, refer to this basic template.

USING THE WEB
The Internet is a significant research tool and information source. You are strongly recommended to set aside some time to see what is available in your subject area. Numerous "think tanks" online journals and data products exist on the web which could be useful for your research (i.e. OAA, GoogleScholar, etc.) The University of Waterloo library, however, has an excellent connection to Internet resources such as online e-journals, inter-loan lending among library.

RESEARCH STRATEGIES

Primary Material
While types of research differ whatever you are doing you are likely to collect data, notes etc
- collect your material in an orderly way and file it
- keep clear notes on the sources of your material
- read through your material every now and then - you can forget things

Secondary Material
You do not need to know everything that has been written on your topic but you should have a reasonable knowledge of trends in recent writing and of important older works:
- use the library catalogue and search under topic or search whole entry
- contact the librarian who can direct you to the latest or most important sources
- look at some recent books/ journals: what are their main preoccupations? who do they cite?
- use bibliographies: ask your supervisor what authors/books to look at
- look at the World Wide Web, although remember that much of it may be of mediocre or poor quality, but there is some useful material such as bibliographies, electronic texts, biographical information
- restrict your reading to what is relevant to your topic but keep an eye open for material in unexpected places

TIME MANAGEMENT

STAGES
Writing a thesis falls into various stages, identify them and plan ahead:
- looking around, finding a thesis
- collecting information
- developing ideas/planning your thesis
- writing the actual thesis- this should be done in stages,
- presentation - getting footnotes right, proof reading, having it laser printed,

At all stages show your work to your supervisor and get their comments – do not wait until the thesis is complete.

TIME ALLOCATION
Find some time each week throughout the term for your thesis and plan for blocks of time at crucial stages of the thesis- you need to concentrate only on your thesis for 3-5 or more days a week at crucial points – treat it like a job!!!

COMPLETING ON TIME
- start writing early
- begin to draft sections as early as possible
- produce a first draft of the whole thesis with plenty of time for it to be read by your supervisor, and if

necessary, redrafted
- allow plenty of time for the final stage of reparing the actual copy/copies for submission (this always takes longer than you think.

BASIC RULES

See your supervisor often throughout the year - if possible have a regular time e.g. every two weeks. Do not rush to define your topic too early- give yourself time to look around (don't overdo it though!)

1 Identify the various stages of your work- leave plenty of time for each
2 Plan for blocks of time at crucial stages of your thesis
3 Be prepared to modify your ideas and plans as you go along
4 Begin writing early
5 Make successive drafts of your thesis or parts of it
6 Show your supervisor your plans and drafts as you produce them – don't wait until the last minute
7 Make a next-to-final complete draft in plenty of time for it to be read and modified
8 Allow plenty of time to prepare final copy/copies for presentation
9 Please remember all theses are different and the above rules are meant to provide a set of general guidelines.