

CS6500 Thesis Guidelines

This document is shared as a guide for the MSc DSA thesis. The guide covers both writing and evaluation.

If you have any questions about the guidelines in this document and/or about CS6500, please use the discussion board to raise your question.

1 Key Submission Information

- When to submit? any time upto 4th Sep 2020 (Late submissions cannot be accepted)
- How to submit? Thesis Submission Assignment in CS6500 @ CANVAS
- What to submit? A written thesis as pdf.

2 Thesis Writing

Writing a technical document is a challenging task because you need to adhere to well-defined document format and specifications. Luckily, there are tools that allow you to overlook these details and allow you to focus on the quality of the technical content. Hence, we strongly recommend that you use the provided Latex template for ucc thesis.

Latex, similar to HTML, is written using plain text but you use *commands* that define the format of every element of your document.

For a quick learning path, I would advise you to do the following

1. Watch this. to get a sense of how to use LaTeX.
2. Setup your editing program. You have two classes of editors including local or cloud.
 - (a) The latter option saves you the time/knowledge needed to setup your IDE. I would recommend this option. More specifically, I would recommend that you use Overleaf.
 - (b) The local option has many IDEs to use. Textstudio is a good cross-platform option. Note that you will also need to setup a TeX environment as explained here.
3. Familiarize yourself with LaTeX commands by going through LaTeX cheat Sheet. I have highlighted the commands that are expected to be frequently used.
 - (a) Note that creating tables and writing math could be tricky. Hence, I would recommend using helper tools
 - For tables, you may like to try <https://www.tablesgenerator.com/> and copy the generated code to your document.
 - Use this for editing your equation and copy the code back to your document. If you have many equations to write, you are advised to learn how to manually edit them yourself as it would save you time.
 - (b) If you like to know more or need further explanations, you are advised to read this tutorial.
4. To familiarize yourself with UCC Latex template: Check the provided UCC Thesis Latex Template Guide.pdf (10-15 mins)
 - (a) Watch the provided video for quick start using the provided template.

2.1 Thesis Structure

It is common that the thesis has the following chapters

- Introduction: presenting
- Background and related work: presenting horizontal and vertical coverage for relevant problem area, solutions, and tools.
- One or more chapters covering the presented solution, analysis, and performance evaluation.
- Conclusion and Future work: A summary of what has been achieved and outlook for future extensions.

3 Thesis Evaluation

The maximum grade for cs6400 is 600 (1800/3). The grade is broken down into the following six components.

- **Achievement (600/3)**
The project should be challenging and the objectives should be wholly met. Ideally, there should be evidence of overcoming challenges and problems in an elegant/graceful manner. The thesis outcomes and results should be of interest to theoretic and practical deployment.
- **Technical Writing (200/3)**
The structure should be clear and the English should be good. The presentation should be professional, with good use of tables and diagrams. Where relevant, software documentation should be of good quality and should adhere to documentation standards. The literature should be cited properly. Ideally, your text should be concise, precise, grammatical, and pitched at the right level.
- **Problem Statement and Analysis (300/3)**
The thesis should demonstrate a high understanding of the key problems and a good appreciation of the problem context. The objectives/research goal/questions should be clearly stated and justified. In addition. Where relevant, the requirements analysis should be properly conducted; the requirements should be comprehensive and properly prioritized. Where relevant, a literature review should cite and describe the key sources. Ideally, the requirements analysis and/or literature review should be suitably comprehensive and authoritative. The degree of insight should be high and the analysis should be critical.
- **Main Body of Report (400/3)**
The activities and artifacts should be well-described. E.g. there should be evidence of some methodology; the design and implementation should be well documented and justified; there should be evidence of testing and/or validation. If possible, alternative approaches should be considered for comparison.
- **Evaluation, and Conclusion (300/3)**
The evaluation should be written using objective criteria. The conclusions should be justifiable. Ideally, there should be ideas about future work, and the evaluation should be insightful and thorough. The ideas for future work should show insight or imagination, and deep understanding.

IMPORTANT NOTE: *Your Thesis Examiners cannot make any assumptions about your project: this includes project difficulty, the amount of work required, and the quality of the work. Thesis Examiners can only grade your project based on what you write in your thesis. For this reason, please make sure you document all (relevant) work; the input of, reasoning about, and outcome of all relevant decisions made; and present evidence of relevant work in writing: e.g. an implementation in the form of pseudo-code or program listings.*

4 FAQ

- Do I need to prepare a presentation for my thesis?
CS6500 students do not have to present their work. However, the supervisor may ask you to do so. In the latter case, it is important to note that the grade is solely based on the quality of the work and the written dissertation. That said, it is always important to make a professional impression if you are asked to present your work.