



University  
of Windsor

IOSchool of Computer Science  
<https://cs.uwindsor.ca>

## Master of Applied Computing

COMP-8117

Advanced Software Engineering Topics

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Office Hours : Thursday & Friday (9.00am – 12.00pm EST)

### Individual Report

For this individual report, you're required to think about the content of the course and your future career. Advanced Software Engineering Topics is designed to teach you different skills and techniques used in software engineering in medium-sized and big-sized companies. However, software engineers in companies may have different roles.

In this individual report, we ask you to think your professional project. Especially, your report must analyze and compare the theoretical practices taught in the course with the different practical practices in industry (based on the workshops you attended during the term, event keynotes like MS keynotes, Apple keynotes...).

Especially, you must build a reasoning around the following questions :

- What is software engineering and why software engineers are important ?
- Is software engineering really needed to produce (industrial) software ?
- What are the advantages and drawbacks of software engineering ?
- What is the goal of Software Engineering ? In which domain Software Engineering might be useful ? Do you think that Software Engineering should really exist ?
- What is the different possible roles in theory of software engineers ? In practice ?
- What is the difference between software engineers and software developers ?
- What are the key (main important) aspects of software engineering ?
- In your opinion, what do researchers in software engineering ?
- Based on your previous experience, what did you learn ?
- Given the information you got about software engineering, in your opinion, which role fits the best to your personality and skills, and how would you implement your career path ? In which domain would you like to work ?
- In your opinion, what point(s) was not talked in the course and might be important in software engineering ?

Use the project you made during this course to illustrate your assumptions.

*Instructions*

For this report, two formats are possible :

- following an IEEE Manuscript template. There is no page count limit (10-20 pages in average).
- Write a story in which you explain and answer all the questions. This story should be enough popularized to be understood by a non-technical audience.

The report counts for 5 points, + up to 5 points extra (based on the quality of the reasoning, and the clarity of your career project).

The following is the recommended list of sections for your report if you follow the IEEE model:

1. Title, Authors list and their affiliations (Group number/emails)
2. An abstract paragraph summarizing the objectives, the key experiments, and the findings/results of your work/product.
4. Keywords: find about 5 keywords describing your project. Use specific keywords such as: Emotion analysis...
5. Acknowledgement section containing 2 things: 1) any list of people or source you want to acknowledge that you have received help or input from; and 2) briefly what each of the group members is acknowledged for doing what part in the project (e.g. acknowledge XY for doing tasks: A,B,C; and JD for doing tasks: E, F, G; etc.)
6. "Introduction" - this section should include: problem statement, motivation, background, objectives/hypothesis, and report breakdown description. (1-2 pages)
7. "Related Work" - this section summarizes your survey work related to previously existing products or research papers, resources, articles, that you used to prepare for your project. This could be looked at as a way to present the reader with an overview tutorial that he/she needs to know before understanding your methodology. (1-2 pages)
8. "Approach" - describe your methodology starting with the assumptions, environment, setup, and leading to the algorithms for the prototype you have proposed and developed. Keep this section to 5 pages maximum and make use of adding an "Appendix" at the end for screen captures and additional illustrations if necessary. Focus here on your design. Always use proper UML for any diagrams.
9. "Experimental setup or Demonstration" - After you have finished describing the steps needed to build the prototype and what the prototype components are, in this section you proceed to describe how to execute the prototype and what experiments (or runs, or tests) look like (Setup and interpretation of data that you collect). Describe the execution and what the prototype



accomplishes under what parameters and assumptions. Show any results you may have and explain them. 2-5 pages maximum for this section.

10. "Discussion" - so why did the prototype produce such behaviour/results; were there any changes as you moved from one phase to another? Did everything go according to plan? What went on behind the scenes? elaborate on the results and focus on verification and validation discussions. What do the tests/experiments/ results mean? (1-5 pages max)

11. "Conclusion" - reflect back on your set objectives and your eventual findings/product; what connection do you make? What did you achieve, and what did you fail to achieve? And under what assumptions and limitations does your prototype work. What benefits does it have? (1-2 pages)

12. "Future Work" - describe future work. Maybe the next iteration. If you plan to write a research paper briefly describe what its scientific merits and objectives are going to be and what venue might you be targeting. If you plan to develop the work into a commercial product, briefly describe your ambitions and brief market analysis. (0.5 - 1 pages)

13. "References" - list of references USED In this report using proper IEEE format. Make sure you use proper and complete notation.

14. "Appendix A - Group Work" - Discuss the details of how your group collaborated, describing all project management techniques and software version control and testing methods employed in this project. You can describe the tasks, or provide screenshots from your online repositories describing how they were setup and could be accessed.

15. Any other appendix you may need, including from part 8 ("Approach Details").

16. Add a special Acknowledgment: in this section briefly acknowledge the use of any academic licenses (such as IBM or Azure, etc) that you may have used for this project. Optionally you may provide any comments on your experience with the specific platform (example: discuss positive and negative experiences with the platform - I will compile this section and submit it to the appropriate company for feedback).