WATERLOO CASES in DESIGN ENGineering (WCDE)

Case STUDY template

(Case Study Title)

Authors

# Guidelines

The case study is the final product. It consists largely of material from your work term report, edited and formatted as a case study. WCDE will provide editorial suggestions and comments to help you improve the final case study.

A case study is just an engineering problem with a solution. Consider how someone with no background in this topic would understand your problem and your explanation.

# Case Study (Module 1)

The case study (module 1) is a comprehensive presentation of the problem statement. After reading this module, students should know all of the key information and be in a position to approach the solution. Try not to provide information about the solution in the first module. A key value of the case method is to give students the opportunity to decide for themselves how to approach a problem. Note that this is the only module that is typically released to students. The subsequent modules are considered ‘solution modules’ and will be made available to the instructor to facilitate discussion and provide additional specific information that may be required for the solution.

# Introduction

Opening paragraph should be the same as the one in the revised case plan. Include figure from case summary as well.

# Company Name

Provide more detail about the company and complete context for the situation of concern. Include:

* What do they do
* How large they are
* The company’s main market
* The role of the unit you worked for in the company

# Complete other modules as outlined in the revised case plan

In general, your case should start out very general and get more specific as you introduce the situation of concern. The case should end with a statement of your role in the situation – what you were asked to do. For example, “I.M. Student, a 3rd year Chemical Engineering student, was asked to design a safety system to reduce the impact of the higher than expected number of fault conditions experienced in the microbrewery condenser over the past 3 months.” Do not provide any information about the chosen solution, except in such cases where you were told to do something specific. For example, in the previous paragraph, I.M. Student may have been asked to size a pressure-relief valve.

* Include any pictures with captions from your work term report that would be helpful in understanding either the context or the problem. Be sure to include any high-level data that a student would need to solve this problem.

# Module 2

Module 2 usually provides a further exploration of the problem, the preliminary or needs analysis for design problems. It could contain a further analysis of the problem, and a statement of requirements, constraints and criteria, each with a brief explanation. For an engineering analysis case, this could represent the background theory and/or an explanation and verification of the analysis approach.

* Complete the sections listed in the revised case plan for this module.
* Include any pictures with appropriate captions from your work term report.

# Module 3

Module 3 provides more detail on your solution to the problem, along with any validation or proof. Divide your report into as many modules as seem appropriate. The modules are sub-divided according to major phases in the solution, and/or different engineering concepts applied. In a particular course, students may read the case study and only solve the problem as outlined in module 3, for example.

As for a work term report, the solution should be sufficiently well explained and all appropriate data presented so that you can convince a fellow engineer that your solution is correct. Clearly explain Present any tools, formulas and engineering principles that were used. Include all key steps for the calculations. Clearly present the final solution.

* Complete the sections listed in the revised case plan for this module.
* Include any pictures with appropriate captions from your work term report.

Other Modules(if applicable)

Complete any other modules Listed in the revised case plan, following the same format as above.

# References (use style: References)

Include any references you used in your work term report in [IEEE format](http://www.ieee.org/documents/ieeecitationref.pdf). Your work term report may also be a source and should be cited [1] appropriately, and listed as below. Note that it is not necessary to cite ideas or figures from your work report, provided that they are yours, since you are the author of this case study as well. Of course, all figures, tables and ideas which are not your own must be appropriately cited [2]. And you must include citations for any references listed.

1. Your name, “Title of work report,” Company name you worked at, 2B Work Term Report, Department of Mechanical Engineering, University of Waterloo, Waterloo, ON, Canada, Date of work report.