WATERLOO CASES in DESIGN ENGineering (WCDE)

Case Plan Writing Guidelines (Case Study Title)

Case Plan

Authors

# Guidelines

The case plan is an outline of the proposed case study. It organizes your content and outlines the data to be used. It will be used by WCDE to evaluate the potential for your case study, and by your employer to assess whether they are comfortable releasing this material. Only proceed to step 3 after you have received feedback on your case plan.

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.

WCDE-00xxx-CP (Case number assigned by WCDE after acceptance of your case summary)

# Introduction

* The first paragraph outlines the overall problem, including the context and motivation. Use full sentences, not point form.
* Start the first paragraph by introducing the company and the specific department/unit within the company that provide the context for the problem. Then narrow down to the general issue.
* Include:
  + Who is involved
  + What is required
  + Where this is taking place
  + When (the general timeframe)
  + Why this is necessary
* Someone reading this paragraph should have a good idea about the general problem and be motivated to read further to get details
* This paragraph should include a reference to Figure 1, an illustration that best describe the overall context or problem
* The second paragraph is a brief outline of the author’s role in the proceedings, along with a general statement of the overall problem. It has a standard format and ends with a reference to your work term report:

Example: Mary Jane, a 4th year Electrical Engineering Co-op student, was asked by her immediate supervisor to suggest a potential solution to the problem of excessive power consumption in McFly Inc’s flux capacitor circuit [1].

[Add appropriate picture, graph or chart inside this box]

Figure : Caption [Ref.]

# Intended Learning Outcomes and Target Courses

* The basic engineering principles used in the case study, and what you expect students could learn from this case study. List these in full sentences.
  + Example: This case study can be used to illustrate concepts of forecasting models. It also develops student’s problem solving skills.
* Based on your own experience (or look in the course calendar), indicate what courses this course might be applicable to
* Example: The case can be used in:
  + Strategies for Management Engineering Concepts (MSCI 100)
  + Probability and Statistics for Engineers (MSCI 252)

# Organization of Case

The following is a breakdown of the case study’s modules. A brief summary of the content is also listed for each part.

Provide one paragraph outlining the structure for the case. This can be written after the following sections.

# WCDE-00xxx-01 Case Study

Module 1 presents 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.

This module will constitute the case itself and will present the problem description and background information, including all necessary data. By reading the case study, students should have all the information they need to solve the problem. The module will include:

| Module 01 Content | Suggested Student Activities |
| --- | --- |
| * Introduction * Subtitle 1   + Subtitle 2 * Subtitle 1 * … * Problem Statement * Appendices | * Item 1 * Item 2 * Item 3 * Item 4 |

# WCDE-00xxx-02: Appropriate Title

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 module could represent the background theory and/or an explanation and verification of the analysis approach.

* In a few sentences describe what this module will do

| Module 02 Content | Suggested Student Activities |
| --- | --- |
| * Introduction * Subtitle 1   + Subtitle 2 * Subtitle 1 * … * Appendices | * Item 1 * Item 2 * Item 3 * Item 4 |

# WCDE-00xxx-03: Appropriate Title

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 and present any tools, formulas and engineering principles that were used. Include all key steps for the calculations, if it is not too long or computer generated. If it is done by trial and error then write about all the trials and how they lead to the final answer. Clearly present the final solution.

* In a few sentences describe what this module will do

| Module 03 Content | Suggested Student Activities |
| --- | --- |
| * Introduction * Subtitle 1   + Subtitle 2 * Subtitle 1 * … * Appendices | * Item 1 * Item 2 * Item 3 * Item 4 |

# WCDE-00xxx-0x: Appropriate Title

Follow the same format for any additional module that you may need.

# Data Included

Provide information about any specific data included from the work term report, and a brief description of any Figures or Tables used. This information will be used by WCDE to ensure that there is sufficient real-world data to make this a suitable case study for use in class, and by your employer to ensure that they will be comfortable releasing this data for class use.

Included from source document (Comprehensive and meaningful list):

* Include in list any Figures, Tables and Appendices from source document.
* Item 2
* Item 3

Additional data required includes:

* Appropriate multimedia content including photos, video or audio files
* Section is optional and can be removed if not required. List any missing information or material requiring clarification on from student or company.
* Highlight missing data in the email to the case source and get feedback from the case source whether or not the activity is possible

# Time Plan

The time plan is to help WCDE and your employer better allocate their time. Provide conservative estimates to ensure you are able to maintain the schedule that you propose, allowing for your school and work commitments.

The proposed time plan is as follows:

Table 1–Time Plan

|  |  |
| --- | --- |
| **Date** | **Step** |
| Date | Date you intend to submit the Case plan (step 2) |
| Date (add two weeks to the date above) | Receive feedback for your Case plan |
| Date (add two weeks to the date above) | Company agreement for you to use this material for educational purposes  Give employer at least two weeks to respond |
| Date | Date you intend to submit the draft Case study (step 3) |
| Date (add two weeks to the date above) | Receive all external review comments on your case study |
| Date | Date you intend to submit the final Case study (step 3) after reviewing the comments. |
| Date (add two weeks to the date above) | Date you intend to submit copyright license agreement and case release form  Give employer at least two weeks to sign the case release form |

**References**

Include any references you used in your work term report in [IEEE format](http://www.ieee.org/documents/ieeecitationref.pdf). You can include all references at this stage, even if they are not cited in the case plan, to give further information about your case.

Your work term report is also a source and should be listed in this format

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.

Once you have submitted this Case Plan, WCDE will review and edit it to provide feedback. Use this revised case plan as a guide to draft your actual case study (Step 3).