

ETR591

Detailed Outline – 30%

Due Date: As per Schedule

- Is an outline showcasing the sections and format of your report
- **It is tailored to your report**
- Forms the basis for your report in ETR592
- Must contain at least 6 sections (likely more)
- A good outline shows the organization, logical flow, and content elements of the actual technical report, in a 'snapshot'.
- Vague, disorganized, incomplete outlines do not produce passable reports
- **Make sure to include technical data in appendices.** This is raw data that you required for your analysis.

Format

1. **DO NOT use personal pronouns** i.e, I, me, my, they etc..
2. Spell out the word(s) or phrase **first** then use acronym in brackets.
Example: Low impact Development (LID). Then use the acronym in the rest of the document.
3. Use numbered sections and sub-sections Ex) 1.0, 1.1., 1.2, 2.0, 2.1 etc.
4. Be technical in terms/wording and writing style.
5. Single Spaced. Except for References.
6. 12-point size.
7. Standard font (Times Roman, Calibri, Arial).
8. Standard Margins (Word automatically has this set up – **do not change**).

Length

- 4 -8 pages maximum

Covering Page	1 Page
Detailed Outline	3-7 Pages
References	1 Page (Always last and a separate page)

Submission

1. Electronic copy under "Assignment" in BB.
 2. MUST be **ONE file**
 3. MUST be a **WORD file** – other files will not be accepted
 4. SafeAssign
 5. Due on date specific to your section
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Grading

Detailed Outline is 30% of final mark. The Breakdown is as follows:

- 20% Detailed Outline – 51 marks
- 10% Technical Data Presented – 26 marks

The Detailed Outline Rubric is available under “Assignments”.

- It is **recommended** that each student review the rubric to see how your assignment is evaluated.
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1.0 Introduction

Take this introduction from your graded topic proposal document – Incorporate any changes that the professor made

1.1 Background

Take this introduction from your graded topic proposal document – Incorporate any changes that the professor made

1.2 Purpose

Take this introduction from your graded topic proposal document – Incorporate any changes that the professor made

2.0 Problem

Take this introduction from your graded topic proposal document – Incorporate any changes that the professor made

3.0 Scope

Take this introduction from your graded topic proposal document – Incorporate any changes that the professor made

4.0 Current Site Conditions

Write one paragraph (approximately 4-6 sentences), which introduces, with some brief yet specific indication of content, what your subsequent second level (and possibly third level, if you have them) headings will analyse and discuss. Do not write overly general and vague section paragraph introductions. The purpose of your outline is for you to demonstrate that you know what will go into your report sections, so you can effectively continue with the analysis of your topic and the writing of your report.

4.1 Current Temperatures

4.2 Lake Ontario Volume

4.3 Environment Canada Weather Data

5.0 Deep Lake Cooling Principals

Write one paragraph (approximately 4-6 sentences), which introduces, with some brief yet specific indication of content, what your subsequent second level (and possibly third level, if you have them) headings will analyse and discuss. Do not write overly general and vague section paragraph introductions. The purpose of your outline is for you to demonstrate that you know what will go into your report sections, so you can effectively continue with the analysis of your topic and the writing of your report.

5.1 Refrigeration Technology

5.2 Heat Transfer

6.0 Potential Solutions

Write one paragraph (approximately 4-6 sentences), which introduces, with some brief yet specific indication of content, what your subsequent second level (and possibly third level, if you have them) headings will analyse and discuss. Do **not** write overly general and vague section paragraph introductions. The purpose of your outline is for you to demonstrate that you know what will go into your report sections, so you can effectively continue with the analysis of your topic and the writing of your report.

6.1 Do Nothing

6.2 Solution 1 – state what it is

6.3 Solution 2 – state what it is

6.4 Solution 3 – state what it is

7.0 Evaluation of Solutions

Write one paragraph (approximately 4-6 sentences), which introduces, with some brief yet specific indication of content, what your subsequent second level (and possibly third level, if you have them) headings will analyze and discuss. Do **not** write overly general and vague section paragraph introductions. The purpose of your outline is for you to demonstrate that you know what will go into your report sections, so you can effectively continue with the analysis of your topic and the writing of your report.

7.1 Evaluating factor #1

7.2 Evaluating factor #2

7.3 Evaluation factor #3

8.0 Problem Based Methodology

Write one paragraph (approximately 4-6 sentences—more, if it is a long section, like the one below), which introduces, with some brief yet specific indication of content, what your subsequent second level (and possibly third level, if you have them) headings will analyse and discuss. Do **not** write overly general and vague section paragraph introductions. The purpose of your outline is for you to demonstrate that you know what will go into your report sections, so you can effectively continue with the analysis of your topic and the writing of your report.

8.1 Total Cooling Load Determination

8.1.1 Unit Cooling Load Assumption

8.1.2 Total Cooling Load

8.2 Chillers and Cooling Towers

8.2.1 Electricity Assumption

8.2.2 Electricity Consumption of Chillers & Cooling Towers

8.3 Deep Lake Water Cooling System

8.3.1 Raw Water Intake System

8.3.1.1 Mass of Water

8.3.1.2 Flow Rate of Water

8.3.1.3 Lake Water Intake Pump Selection

8.3.2 Circulation System

8.3.2.1 Pipe Sizing

8.3.2.2 Pump Sizing

8.3.3 Distribution System

8.3.3.1 Pipe Sizing

8.3.3.2 Pump Selection

8.3.3.3 Supplemental Cooling Source

9.0 Energy Efficiencies

Write one paragraph (approximately 4-6 sentences), which introduces, with some brief yet specific indication of content, what your subsequent second level (and possibly third level, if you have them) headings will analyse and discuss

9.1 Energy Savings

9.2 Water Savings

10.0 Environmental and Commercial Benefits

Write one paragraph (approximately 4-6 sentences), which introduces, with some brief yet specific indication of content, what your subsequent second level (and possibly third level, if you have them) headings will analyse and discuss. *Do not write overly general and vague section paragraph introductions. The purpose of your outline is for you to demonstrate that you know what will go into your report sections, so you can effectively continue with the analysis of your topic and the writing of your report.*

10.1 Air Pollutants Emissions Reduction

10.2 Ozone Depleting Substances Reduction

10.3 Cleaner Drinking Water

10.4 Commercial Benefits

11.0 Results

What are your expected results

12.0 Conclusions

- summary of entire report – intro, problem, scope, solutions, evaluations, results

13.0 Recommendation (if any)

14.0 References

APA format

15.0 Appendix A - Technical Data

- Present your technical raw data under an appendix
 - You can choose to have several appendices to showcase your data
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