**California State University, Long Beach**

Computer Engineering and Computer Science Department

**[Paper Title Here]**

**Submitted by**

[Your name here]

**Abstract**

The abstract is a *clear, concise, and complete* summary of the project, including the purpose, methodology, results, and major conclusions. Although the abstract is the first section that the audience reads, it is usually the last section that the author writes. The abstract should be one or possibly two paragraphs in length and appear on the title page.

The abstract will repeat information provided in the report. The abstract *is not* an introductory section of the report, but must be able to stand alone. Some people may read it and continue on with the report for details; others may never read the rest of the report. Your job is to entice the reader to continue reading the report, but summarize all key results in the abstract.

**Introduction**

The report introduction will have some elements that resemble the abstract, but it must include other information as well. Don’t worry about anything that seems repetitive or redundant with the abstract; repetition here is alright because the abstract is not a replacement for the introduction. Nor is the introduction supposed to flow from the abstract – they are distinct entities within the report.

The report introduction serves, literally, to introduce the reader to the report that follows. It needs to draw the reader in, to make her/him interested, to ensure that the relevance of the report is apparent. Thus the introduction offers more kinds of information than the abstract did. To write an effective introduction, try to include the following information:

* any background information that will help orient the reader (the context of the experiment, the need for the information). A brief statement that covers this information can be very useful to readers, especially as reports get filed and not read again for months or years hence;
* a statement of the purpose of the experiment/results being reported on;
* a statement of the scope of the report, including any limitations of what it does and does not offer to the reader;
* a roadmap (overview, preview) of what information is provided subsequently in the individual report sections.

Do not write verbatim what was written in the Lab Handout! **DO NOT USE FIRST PERSON! i.e., do not use “I” or “we”**. The document should be double-spaced or one and one-half spaced. The margins should be one inch on all sides. You can choose to justify the text or not, but whatever you decide, be consistent. The Introduction section should include the pertinent literature and background from other referenced sources (if appropriate). These references must be listed in the **Reference** section. When you cite a reference in the text give its number at the end of the relevant sentence in square brackets, e.g., “Free vibrations may be classified as underdamped, critically damped, or overdamped [1].”

**Problem Statement**

In this section, you need to provide a clear description of your problem. For example, if it is a classification problem, you need to explain the type of the problem, and the type of the classification model that you will use (e.g., MLP).

**Model Improvement technique description.**

In this section, you need to clearly present you model improvement technique. It needs to be clear and easy to understand. If it is an algorithm, you can use pseudocode or flowcharts to show the implementation flow.

**Experimental Results**

In this section, describe the results. Remember to refer your reader to specific Figures, Tables and Appendices where applicable and show your calculations and data manipulation. Note that it is preferable to have Figures and Tables close to the text where they are discussed. The goal here is to report the results or simulations – ***NOT*** to discuss whether they are good or bad results. Usually the trends in a graph are pointed out, but not fully explained. The discussion of the trend is saved for the Discussion section. Some labs will have lots of data, and some very little.

**Discussion/Analysis of Results**

In the discussion, you should point out how your experimental results compare with theory, and suggest and explain reasons for deviations. Discuss the sources of error in this section. If this lab did not contain a lot of experimental results, this section will be used to answer questions posed in the lab report. For some labs this will be the longest section of the lab and for some labs very short. Never use a statement like “the measured results are about the same as the predicted value of 20 ns”. Always quantify your statements and make no judgments. The statement “about the same” does not say anything. Do you mean with 1%, 5%, .001%? your idea of “close” and the readers idea of “close” may not be the same. Do not make judgement statements – provide analysis of the results.

**Conclusions**

Summarize the project goals and the major findings in a paragraph. There may be repetition with the Abstract, but again that is okay.

**Acknowledgments**

Acknowledgments are made to individuals not mentioned elsewhere in the report who have made an important contribution. For example, “In preparing this template for MIM U455, the lab template for Materials Science (MIM 1240) prepared by Professor Isaacs was used.” In your report you may not need an Acknowledgment.

**References**

1. S.S. Rao, *Mechanical Vibrations,* Fourth Edition, Prentice-Hall, Inc., New Jersey, 2004.

**Appendix A: Types of Information Included in Appendices**

**Note:** Each appendix should begin on a separate page. Appendices are used for specific calculations that would clutter the main body of text. Remember to specifically refer the reader to an appendix in the body of the report.

* Detailed derivations
* Location of data files
* Other information that is too detailed to place in the main body of the report.