



Year 2024

# MASTER EU4M in Mechatronic Engineering

Domain: Control - Robotics - Mechanical Engineering

Mention: Mechatronic Systems Design

**Master's Thesis**

Title goes here

Last Name, First Name  
Supervisor: ENSMM Supervisor  
Co-supervisor: Company Supervisor

Company Name  
Company Address

## ABSTRACT

Here you write your abstract, summarizing the key points of your research, methodology, findings, and conclusions in a concise manner..

**Keywords:** Keyword 1, Keyword 2, Keyword 3, Keyword 4

## DECLARATION

I hereby certify that this report constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions or writings of another.

I declare that the report describes original work that has not previously been presented for the award of any other degree of any institution.

Signed,

*Replace this*

Name

## ACKNOWLEDGEMENTS

Here you acknowledge the people and institutions that helped you during your research and writing process.

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# Chapter 1

## Introduction

Here you introduce the topic of your research, provide background information, state the problem, and outline the objectives and scope of your thesis.

### 1.1 Background

Background and motivation

## 1.2 Problem Statement

## **1.3 Objectives**

## **1.4 Scope of the Study**

## 1.5 Thesis Organization

The rest of this thesis is organized as follows:

- **Chapter 2: Literature Review:** Presents a .....
- **Chapter 3: Mathematical Modelling:** Focuses on the development of mathematical models for.....
- **Chapter 4: Control:** Discusses various control strategies for .....
- **Chapter 5: Results and Discussions:** Presents the results and discussions, analyzing the performance of the developed models and control strategies.
- **Chapter 6: Conclusion:** Concludes the thesis by summarizing the key findings, and providing recommendations for future research.

# Chapter 2

## Literature Review

Here you review relevant literature, discuss previous research, identify gaps in the existing knowledge, and position your research within the broader academic context.

# Chapter 3

## Mathematical Modelling

Here you describe the theoretical models and simulations used in your research, including any mathematical formulations and assumptions.

# Chapter 4

## Control

Here you discuss the control strategies and algorithms implemented in your research, including their development, analysis, and any simulations or experiments conducted.

**Sample Figure:**

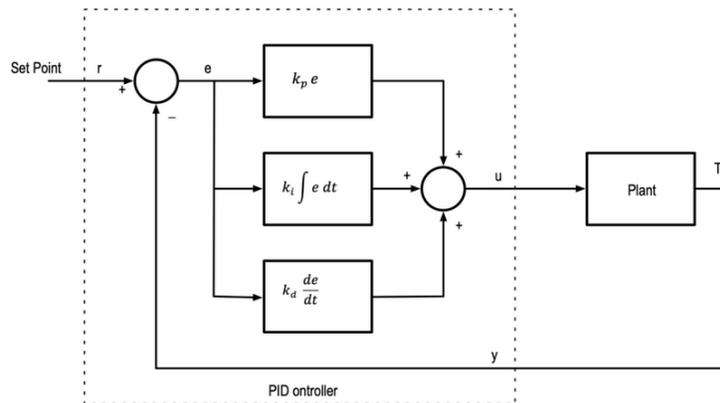


Figure 4.1: Structure of a PID Controller

**Sample Table:**

Parameter	Description	Value
$K_p$	Proportional Gain	1.5
$K_i$	Integral Gain	0.75
$K_d$	Derivative Gain	0.1

Table 4.1: Sample PID Controller Parameters

# Chapter 5

## Results and Discussions

In this chapter, the results of the implementation of the three distinct Here you present the results of your research, including data, graphs, and tables, and discuss their implications, significance, and how they relate to your hypotheses and the existing literature.

# Chapter 6

## Conclusion and Future Work

Here you summarize your findings, discuss the contributions of your research, acknowledge its limitations, and suggest directions for future research.

### 6.1 Conclusion

This thesis presented.....

### 6.2 Future Work

Looking ahead,.....