ECE311: Introduction to Control Systems

Summary Notes

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Contents

Note: This document is not meant to be a comprehensive treatment of the material or contain the complete course notes. The primary purpose of this document is to summarise key concepts along with some analysis and proofs, that can aid in revising the course or serve as a quick reference to a particular topic. Any suggestions or corrections are appreciated and can be sent directly to `pranshu.malik@mail.utoronto.ca`

1 Introduction to Control Systems

2 Mathematical Models of Systems

2.1 Input-Output Representation

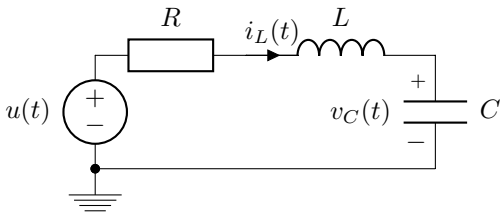
2.2 State Representation

2.3 Transfer Functions

2.4 Transient Response

2.4.1 Performance Specifications in the Time Domain

3 Feedback in Control Systems



4 Stability

4.1 Internal Stability

4.2 BIBO Stability

4.3 The Tracking Problem

4.4 The Stabilization Problem

4.5 Frequency Response

4.5.1 Bode Plots

4.5.2 Performance Specifications in the Frequency Domain

5 Controller Design for Systems

6 Acknowledgements

7 Formula Sheet