# Introduction to ${\rm I\!AT}_{\!E\!} \! X$

ECE 557 — Thursday, 1:30 — T. Pavlic (instructor)

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#### Introduction

This document has some appendices. For example, Appendix A is a glossary, and Appendix B gives some parts, and Appendix C has some other things.

#### Some Subsections

We can have lower-level sections and subsections and subsubsections and paragraphs...

#### Some Math

Some in-line math might like like  $x_0 = 5$ , while an unnumbered and displayed equation could look like

$$\sin(T) = \int_0^T \cos(t) dt.$$

If we want to refer to an equation later, we better number it, like

$$\exp(it) \triangleq e^{it} = \cos(t) + i\sin(t) \tag{1}$$

and

$$\Re(e^{it}) = \cos(t). \tag{2}$$

Of course, giving both Equations (1) and (2) is silly because Equation (2) is obvious from Equation (1).

#### Some Figures

I might also want to include figures, like Figure 1.

A picture could be here.

Figure 1: Some figure.

#### More Information

We can refer to Figure 1 from anywhere in the document. In fact, we can still refer to Equation (1), and each of these references is hyperlinked to the appropriate target within the document.

#### Conclusions

We put some conclusions here.

### A Glossary

- **PID** Proportional–Integral–Derivative, a control scheme combining aspects of lead–lag compensation in such a way that can be easily tuned in the field
- **locus** a curve made up of a set of related points (e.g., a set of points that each make a certain polynomial equal to zero for different values of some parameter)

#### B Data

Check out Table B.1.

Frequency	Gain	Phase Shift
5  Hz	5	$-10^{\circ}$
$15 \mathrm{~Hz}$	5	$-15^{\circ}$
1 kHz	0.5	$-90^{\circ}$

Table B.1: Some data

Notice how Table B.1 has a number that includes the appendix. When we turn on numbering this way, the numbers reset to 1 each time we enter a new appendix.

## B.1 Section in Appendix

Of course, we can divide up each appendix as well.

#### B.1.1 And more

We can have deeper divisions too.

## C Other Things

We might find extra equations here, like

$$x_0 = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$
 and  $x_1 = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$ . (C.1)