

# SFWR ENG 3DX4 Summary

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Instructor: Dr. Lawford  
Course: SFWR ENG 3DX4

*Math objects made using [MathType](#); graphs made using [Winplot](#).*

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Note: refer to [my previous summary](#). I may review to clarify or correct, but mostly I will omit those things.

## Introduction to Systems

Systems can be represented by **block diagrams** to make it easier to marginalize the different parts of the systems.

## Laplace

Useful for...

Time begins when your signal begins

$$h(t) = \begin{cases} 0, & t < 0 \\ 1, & t \geq 0 \end{cases}$$

Initial conditions:

- $c(0)$

**Time domain** ( $t$ ): variables are lower case, e.g.  $f(t)$

**Frequency domain** ( $s$ ): variables are upper case, e.g.  $F(s)$

**Transfer function:**

When doing the inverse Laplace, it's useful to break your fractions up so that you can