Lecture 45, Monday, April 18, 2022

- Causality
  - If the output of a system, $y(t)$, does **not** depend on the future of the input, $f(t)$, then the system is *causal*.

    - This has to be true for **any** input $f(t)$
  - If the output $y(t)$ does depend on the future of the input $f(t)$, then the system is *non-causal* (unrealizable).
  - Causality may apply to any system, but if the system is LTI with impulse response $h(t)$, then

$$\text{system is causal} \iff h(t) = 0 \text{ for } t < 0$$

- A signal $f(t)$ is causal if it could be an LTIC impulse response.

$$f(t) \text{ is causal} \iff f(t) = 0 \text{ for } t < 0$$

