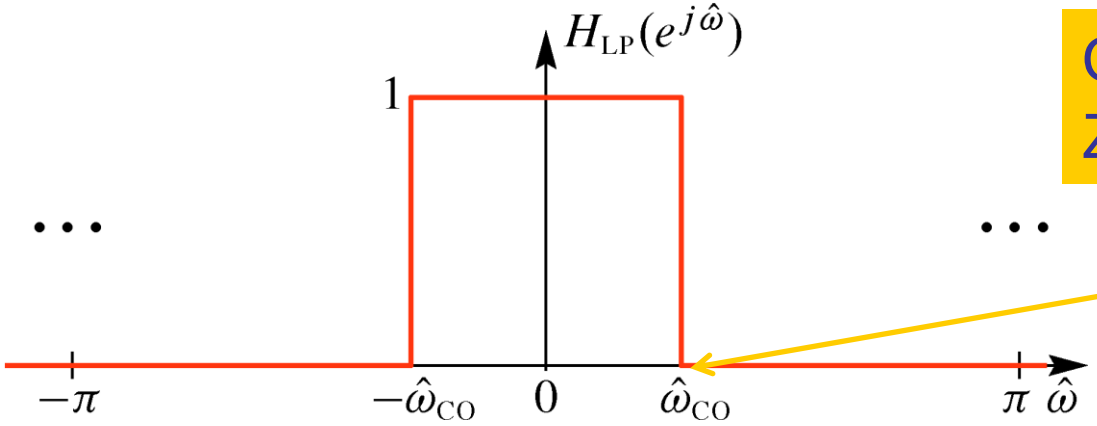
# Hands-on (submission requirements)

- MATLAB source codes & report
- Result plots, and your comments on the results must be presented in your report.

# Hands-on Guide

- IDEAL LowPass Filter (LPF)



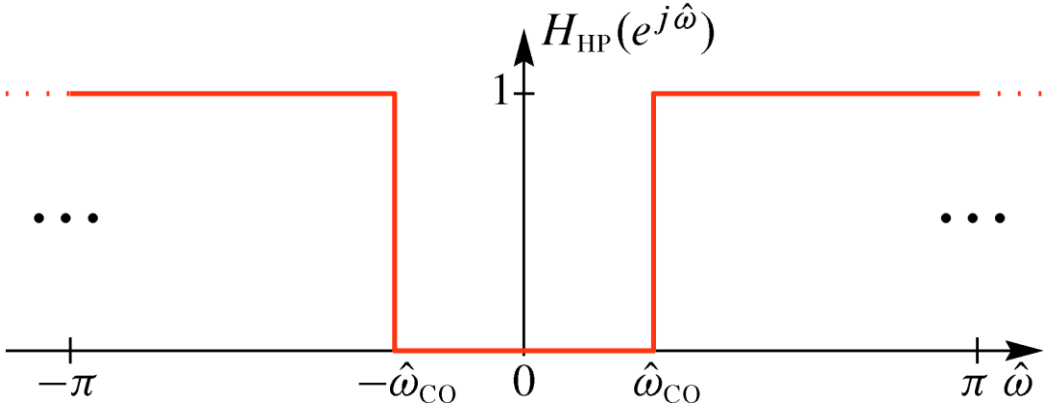

One in the passband
Zero in the stopband

$\hat{\omega}_{co}$ is cutoff frequency

$$H_{LP}(e^{j\hat{\omega}}) = \begin{cases} 1, & |\hat{\omega}| \le \hat{\omega}_{\mathrm{co}} \\ 0, & \hat{\omega}_{\mathrm{co}} < |\hat{\omega}| \le \pi \end{cases}$$

# Hands-on Guide

- IDEAL LowPass Filter (LPF)




One in the passband
Zero in the stopband

$$H_{\mathrm{HP}}(e^{j\hat{\omega}}) = \begin{cases} 0, & |\hat{\omega}| \le \hat{\omega}_{\mathrm{co}} \\ 1, & \hat{\omega}_{\mathrm{co}} < |\hat{\omega}| \le \pi \end{cases} = 1 - H_{LP}(e^{j\hat{\omega}})$$