Preliminaries

- **Objective:** This prelab assignment aims to familiarize you with intersymbol interference (ISI), which is the source of bit errors in a baseband-pulse transmission system. Nyquist criteria for ISI, pulse shaping and raised-cosine filter and eye pattern will be covered.
- In this week, we will understand and answer the following questions. **Please study and answer these questions to be successful for the MATLAB laboratory on Communications Systems Lab 4.**
  - What is the inter-symbol interference (ISI)?
  - What is the meaning of roll-off factor?
  - What is the Nyquist pulse-shaping criterion? Explain.
  - What are the filters used for pulse shaping?
  - Study on the raised cosine frequency characteristic.
  - Study what is the minimum system bandwidth required for a symbol rate of $R|s$ with the raised cosine filter.
  - In the eye diagram, how we measure the ISI effect?
  - Study on following MATLAB functions: **upfirdn(), rcosdesign(), linspace(), awgn(), randi(), rand(), eyediagram()**.