

ECE/EEE F311 Communication Systems (First Semester 2023-2024)
Lab-2 (Saturday) (26-08-2023)

Objectives

In this task, the objective is to process the signal over a system and see the effect of system on the signal.

Task 1

- (a) Plot the time domain and frequency domain of the signal $m(t) = m_1(t)m_2(t)$, where $m_1(t) = 200\text{sinc}(200\pi t)$ and $m_2(t) = 400\text{sinc}(400\pi t)$.
- (b) Pass the signal $m(t)$ over a transmitter block such that the output bandwidth is limited to 100 Hz. Use function "conv".

Task 2

- (a) $m(t) = \sin(2\pi t) + \frac{1}{3}\sin(6\pi t) + \frac{1}{5}\sin(10\pi t) + \frac{1}{7}\sin(14\pi t)$. Plot $m(t)$ and $|M(f)|$.
- (b) If $x(t) = m(t) \cos 40\pi t$, where $m(t)$ is from 2 (a). Plot $x(t)$ and $|X(f)|$.