

## EEN1043 Wireless/Mobile Communications

### Assessment 1

1st October 2025

Submission date: 15<sup>th</sup> October 2024

Total Marks: 100

1. For the following
  - a. Binary Amplitude Shift Keying
  - b. Quadrature Phase Shift Keying
  - c. 8-Phase Shift Keying

Implement the modulation function without built-in functions

Implement the demodulation function without the built-in functions.

Verify the implementation with the built in commands in MATLAB/PYTHON

Plot the BER for the three modulation schemes

Submit the following

1. Code file (.mat .py file)
2. Report with the following
  - a. Explanation of each line of the code
  - b. Constellation figure of the transmit possibilities
  - c. Constellation figure of the receiver process for the first 20 bits of each modulation.
  - d. BER plots from  $\frac{E_b}{N_0} = 0 - 20$  dB. Highlight on your plot the increase on any one value of  $E_b/N_0$ .