The theoretical BER expressions for the project can be determined as (note that E_b/N_o = SNRperBit):

BPSK

$$P_b = Q\left(\sqrt{\frac{2E_b}{N_o}}\right)$$

QPSK

$$P_b = Q\left(\sqrt{\frac{2E_b}{N_o}}\right)$$

M-PSK

$$P_b = \frac{2}{\log_2(M)} Q\left(\sqrt{\frac{2E_b \log_2(M)}{N_o}} \sin\left(\frac{\pi}{M}\right)\right)$$

16-QAM

$$P_b = 0.75 * Q\left(\sqrt{\frac{4E_b}{5N_o}}\right) + 0.25 * Q\left(3 * \sqrt{\frac{4E_b}{5N_o}}\right)$$