| THE UNIVERSITY OF TEXAS AT SAN ANTONIO |
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| EE 5243 |
| INTRODUCTION TO CYBER-PHYSICAL SYSTEMS |

QUIZ # 3 Ahmad F. Taha September 14, 2015

A dynamical CTLTI system is characterized by $A = \begin{bmatrix} 1 & 3 \\ 3 & 1 \end{bmatrix}$, $C = \begin{bmatrix} 0.5 & 1 \end{bmatrix}$.

- 1. Find a linear state-observer gain $L = [l_1 \ l_2]^{\top}$ such that the poles of the estimation error are -5 and -7.
- 2. Can you place both poles at -6? If yes, what is the corresponding observer gain?