

## Combining Full-State Feedback with an Observer

- ▶ So far, we have focused on autonomous systems ( $u = 0$ ).
- ▶ What about nonzero inputs?

$$\dot{x} = Ax + Bu$$

$$y = Cx$$

— assume  $(A, B)$  is controllable and  $(A, C)$  is observable.

- ▶ Today, we will learn how to use an observer together with estimated state feedback to (approximately) place closed-loop poles.

