

ECE451/551

HW #2

- 1) TF \rightarrow SS: State equations in phase variable form (no need to draw the simulation diagrams) :
page 614, Prob. 1a,d
- 2) TF \rightarrow SS: State equations in dual phase variable form (no need to draw the simulation diagrams):
page 615, Prob. 2a,d
- 3) SS \rightarrow TF: Given state equations obtain the transfer function matrix: page 617, Prob. 5b
- 4) Given state equations determine stability: page 617, Prob. 6a
- 5) TF \rightarrow SS: Alternative state equation representation: Page 618, Prob. 8a, 9b, 10b
- 6) TF \rightarrow SS: Diagonalization using state transformation: Page. 619, Prob. 11b
- 7) TF \rightarrow SS: MIMO: Page. 620, Prob. 14b, Page 621, Prob. 14d
- 8) Controllability and observability: Page 622, Prob. 17a
- 9) Controllable and observable modes: Pages 622-623, Prob. 18
- 10) Detectability: Page 623, Prob. 19