EECE 500. Theory of Linear Systems
Qualifying Exam Topics

1) State space representation of dynamical systems: concepts of state, transition matrices, and solutions of vector linear differential & difference equations.
2) Analysis of linear models in control systems: Internal (Lyapunov) stability, BIBO stability.
3) State-space realization of transfer functions: canonical forms, state-space transformations
4) Controllability & Observability, Stabilizability & detetcability: Definitions and Tests.
5) Design of Controller/Observer: Eigenvalue and pole placement state feedback, full and reduced-order observer design, separation principle.