



# MEEG 311 – Lecture 12

## Vibration and Control

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### **Goals:**

- Second-order systems:
  - Standard form of second-order systems
  - Pole locations: underdamped, critically damped, overdamped
  - Example of a second-order feedback control system
- Unit-step response of second-order systems:
  - Underdamped: oscillations (poles with non-zero imaginary part)
  - Critically damped: fastest response before oscillations appear (real poles)
  - Overdamped: no oscillations, slow response (distinct real poles)