

## **AE 6451: Electric Propulsion – Course Outline**

Prerequisites: AE 4451 Jet & Rocket Propulsion or Equivalent

1. Introduction to and Survey of Electric Propulsion Systems (~1 week)
2. Electricity and Magnetism, & Charged Particles (~2 weeks)
3. Kinetic Theory, Ionization of Gases, & Plasma Physics (~3 weeks)
4. Electrothermal Propulsion (~2 weeks)
  - Resistojets
  - Electrical Discharges
  - Arcjets
5. Electromagnetic Propulsion (~2 weeks)
  - The Lorentz Force
  - Magnetoplasmadynamic (MPD) Thrusters
  - Pulsed Plasma Thrusters (PPTs)
6. Electrostatic Propulsion (~4 weeks)
  - Ion Engines
  - Hall Thrusters
  - Field Emission Electric Propulsion [FEEP] (*if time permits*)
  - Colloid Thrusters (*if time permits*)