

# **Heat Transfer**

## **Calendar**

Week 1: Introduction to conduction, radiation, and convection

Week 2: Heat diffusion equation, One-dimensional conduction

Week 3: Conduction from extended surfaces

Week 4: Two-dimensional steady-state heat conduction, Separation of variables

Week 5: Transient heat conduction

Week 6: Heat conduction in infinite medium, multi-dimensional heat conduction

Week 7: Basic concept of thermal radiation, Definition of intensity

Week 8: Blackbody radiation, Surface radiative properties

Week 9: Gray and diffuse radiation, Environmental radiation

Week 10: View factor, Radiation exchange in enclosures

Week 11: Convection boundary layer, Energy equation

Week 12: External flow, Internal Flow, Heat transfer correlations

Week 13: Free convection

Week 14: Boiling and condensation

Week 15: Heat exchanger analysis

Week 16: Heat exchanger design