

Course Number: 28607

Course Name: Aerosol Particle Transport and Deposition

Course Type:
Prerequisite:
Level: Graduate
Group: Energy Conversion

Type & Max Unit: 3
Corequisite:
First Presentation:
Last Edition:

Objectives:

Topics:

1. Introduction to aerosols
2. Properties of gases
3. Particle size statistics
4. Particle transport: Eulerian-Lagrangian approach
Newton's law and body forces, Brownian motion, particle tracking, inertial transport and deposition, numerical methods
5. Particle transport: Eulerian-Eulerian approach
migration velocity, thermo-phoresis, convective diffusion
6. Filtration
7. Aerosol Coagulation
8. Aerosol condensation and evaporation
9. The general dynamics equation
10. Optical properties

References:

- Aerosol Technology, properties, behavior, and measurement of airborne particles, *by: William C. Hinds*
- Smoke, Dust and Haze, Fundamentals of Aerosol Dynamics, *by: Sheldon K. Friedlander*