

Credits: 7,5. **Grading scale:** TH. **Cycle:** G2 (First Cycle). **Main field:** Technology.

Language of instruction: The course will be given in English on demand. **Optional for:** F4,

F4es, M4fo, MNAV1, N4m. **Course coordinator:** Christina Isaxon,

Christina.isaxon@design.lth.se, Ergonomics and Aerosol Technology. **Recommended**

prerequisites: Basic knowledge in natural sciences. **Assessment:** Written examination

(50%). Laboratory exercises, calculation exercises and project (50%). **Home page:**

<http://www.eat.lth.se>.

Aim

Students should acquire a basic knowledge about aerosols (system in which particles are suspended in a gas) and their physical and chemical properties. Students should achieve understanding of the generation, dispersion, transformation and deposition mechanism as well as get familiar with the measurements techniques. Students should obtain a basic knowledge to be able to evaluate effects of airborne particles on environment and human health. During the course students will get familiar with several applications like nanotechnology, abatement, production, pharmaceutical and clean room technologies.

Knowledge and understanding

For a passing grade the student must

- Be able to explain and use basic concepts within aerosol technology.
- Describe typical measurement techniques which are based on mechanical, electrical and optical properties of aerosols.
- Be able to describe the most important effects that airborne particles have on environment and human health.

Skills and abilities

For a passing grade the student must

Describe the aim, method and results from measurements and be able to compare and discuss the results within outlined above requirements (in Knowledge and Understanding)

Contents

Aerosol physics, aerosol chemistry, sources and sinks of aerosols in indoor and outdoor environments, lung deposition, particles size distribution, sampling and measurement techniques. Aerosol properties and typical particle pollution in indoor and working environments as well as in ambient air. Particles effects on human health and environment. Application of aerosol technology in clean room technology, electronics and pharmaceutical industry. Laboratories are compulsory as they provide opportunity to observe aerosol physical properties as well as give practical experience in measuring particles with various instruments.

Literature

A binder containing the necessary literature will be sold at cost price.