

# **AEROSOL TECHNOLOGY 7.5 cr.**

**MAM242 and TFRG10**

**2014**

**LTH**

**Preliminary schedule for Aerosol Technology – may be subject to changes!**  
**MAM 242/TFRG10, 7.5 cr, 2014**

Date	Time	Place	Session	Subject	Teacher
3 Nov	10:15-12:00	467	L	1. Introduction and course overview	CI
5 Nov	08:15-10:00	467	L	2. B: Mechanical particle properties and measurement techniques	AW
6 Nov	08:15-10:00	467	L	3. B: Basic aerosol physics	CI
10 Nov	08:15-10:00	567	L	4. B: Optical particle properties and measurement techniques	AW
12 Nov	10:15-12:00	467	E	Exercise I + MatLab and project introduction + Summary of lectures 1, 2 and 3	CI
13 Nov	08:15-10:00	467	L	5. B: Electrical particle properties and measurement techniques & Particles and water	GF
17 Nov	10:15-12:00	467	E	Exercise II + Summary of lectures 4 and 5	CI
17 Nov	13:15-17:00	AL	LAB	Coarse Particles*	JJ
19 Nov	08:15-10:00	567	L	6. E&H: Atmospheric aerosols I	AK
19 Nov	13:15-17:00	AL	LAB	Fine and Ultrafine Particles*	JJ
20 Nov	08:15-10:00	467	L	7. E&H: Atmospheric aerosols II / Computer simulations - Aerosol dynamics*	AK/PR
24 Nov	10:15-12:00	467	L	8. E&H: Biological aerosols*	JL
24 Nov	13:15-17:00	AL	LAB	Coarse Particles*	CS
26 Nov	08:15-10:00	567	L	9. E&H: Aerosol, cloud and climate	MS
26 Nov	13:15-17:00	AL	LAB	Fine and Ultrafine Particles*	JJ
27 Nov	10:15-12:00	467	L	15. E&H: Nano safety	CI
1 Dec	10:15-12:00	467	L	Exercise III + Summary of lectures 6, 7, 9 and 10	CI
1 Dec	13:15-17:00	AL	LAB	Coarse Particles*	CS
3 Dec	08:15-10:00	567	L	11. E&H: Aerosols in indoor and industrial environments	AW/CI
3 Dec	13:15-17:00	AL	LAB	Fine and Ultrafine Particles*	CS
4 Dec	08:15-10:00	467	L	12. B: Aerosol chemistry and measurement techniques	JP
8 Dec	10:15-12:00	467	L	13 .IA: Nano particles for electronic structures*	KD
8 Dec	13:15-17:00	AL	LAB	Reserve	JJ/CS
10 Dec	08:15-10:00	567	L	14. IA: Contamination control and clean room technology*	MR
10 Dec	13:15-17:00	AL	LAB	Reserve	JJ/CS
11 Dec	08:15-12:00	467	L	16. E&H: Respiratory deposition & health effects of ambient particles	JR
15 Dec	10:15-11:20	567	E	Exercise IV + Summary of lectures 11, 12, 14, and 16	CI
15 Dec	13:15-17:00	567	P	Project presentation	
17 Dec	08:15-10:00	467	L	10. E&H: Aerosols from combustion processes	JP
17 Dec	13:15-15:00	567		Discussions/ Final remarks	AW/CI/EN
18 Dec	10:15-12:00	567	L	17. IA: Aerosol drug delivery*	OL
12 Jan	8:15-13:00	?	E	Exam	

\* You will sign up on one of these occasions for the Coarse particle lab, and on one for the Fine and Ultrafine particle lab

### Lectures are divided into 3 blocks:

**B – Basics**

**E&H – Environment and Health**

**IA – Industrial Applications**

### Abbreviations used:

**L - Lecture**

**\*) Compulsory attendance to these lectures**

**E - Exercise**

**P - Project**

**LAB – Laboratory exercise**

**AL – Aerosol Lab**

### Lecturers:

<b>AK</b>	Adam Kristensson	( <a href="mailto:adam.kristensson@nuclear.lu.se">adam.kristensson@nuclear.lu.se</a> )
<b>AG</b>	Anders Gudmundsson	( <a href="mailto:anders.gudmundsson@design.lth.se">anders.gudmundsson@design.lth.se</a> )
<b>AW</b>	Aneta Wierzbicka	( <a href="mailto:aneta.wierzbicka@design.lth.se">aneta.wierzbicka@design.lth.se</a> )
<b>AE</b>	Axel Eriksson	( <a href="mailto:axel.eriksson@nuclear.lu.se">axel.eriksson@nuclear.lu.se</a> )
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<b>JR</b>	Jenny Rissler	( <a href="mailto:jenny.rissler@design.lth.se">jenny.rissler@design.lth.se</a> )
<b>KD</b>	Knut Deppert	( <a href="mailto:knut.deppert@ftf.lth.se">knut.deppert@ftf.lth.se</a> )
<b>MS</b>	Moa Sporre	( <a href="mailto:moa.sporre@nuclear.lu.se">moa.sporre@nuclear.lu.se</a> )
<b>MR</b>	Matts Ramstorp	( <a href="mailto:matts@biotekpro.se">matts@biotekpro.se</a> )
<b>OL</b>	Orest Lastow	( <a href="mailto:orest.lastow@zenitdesign.se">orest.lastow@zenitdesign.se</a> )
<b>PR</b>	Pontus Roldin	( <a href="mailto:pontus.roldin@nuclear.lu.se">pontus.roldin@nuclear.lu.se</a> )

### **SHORT COURSE DESCRIPTION**

**Objective:** To give a basic understanding of the generation, transport, transformations and deposition of airborne particles. To give knowledge of and experience in sampling and measuring techniques. To give a basic understanding of aerosols in the atmosphere and the indoor environment. To give a survey of industrial applications. To give the basics for evaluating health hazards and for applying elimination techniques.

#### **Examiner:**

Anders Gudmundsson, tel.:046-2224075, e-mail: [Anders.Gudmundsson@design.lth.se](mailto:Anders.Gudmundsson@design.lth.se)

#### **Course Administrator:**

Christina Isaxon, tel.: 046-222 39 35, e-mail: [Christina.Isaxon@design.lth.se](mailto:Christina.Isaxon@design.lth.se)

#### **Departmental secretary:**

Karin J-son Öhrvik, tel.: 046-222 80 18, e-mail: [karin.ohrvik@design.lth.se](mailto:karin.ohrvik@design.lth.se)

#### **Literature:**

Binder containing the necessary literature and hand-outs for exercises and laboratory exercises, available at cost price during the first lectures. Complimentary literature, lecture notes and other information will be available at the course LUVIT page.

**Lecture halls:**

Ingvar Kamprad Design Center, Sölvegatan 26

**Laboratory Exercises**

At the “Aerosol Laboratory (AL)” between IKDC and A-house.