Stockholms universitet

Preliminary Schedule for Soft Matter, 7.5hp, 2017

Course code: KZ8001
Course responsible:

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Lectures:

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Laboratory

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Exercises

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Lecture room: **C516 (north)**
Literature: **Ian W. Hamley: *Introduction to Soft Matter*, revised edition, Synthetic and Biological Self-Assembling Materials, Wiley 2007**

Lecture	Teacher	Contents
1	AM	Introduction to the course; grading and examination (1h) Introduction to soft matter; surfactants, polymers and colloids (1h)
2	AM	Intermolecular interactions, Structural organization, dynamics (3h) *Section 1.1-1.4*
3	AM	Phase transitions, order parameters, scaling, polydispersity (3h) Section 1.5-1.8
4	LB	Polymers: Introduction, conformation, solutions (2h) Section 2.1-2.5
5	LB	Colloids: Introduction, interparticle forces and stabilisation (3h) Section 3.1-3.7
6	LB	Colloids: Kinetics, sols, gels (2h) Section 3.8-3.10
7	LB	Foams, emulsions, food colloids, concentrated dispersions, rheology (3h) Section 3.11-3.15
8	NH	Experimental techniques (3h) Section 1.9
9	NH	Amphiphiles: Introduction, surface activity, adsorption (3h) Section 4.1-4.5
10	NH	Amphiphiles: Micellization, detergency, liquid crystal phases, templated

		synthesis (3h) Section 4.6-4.12
11	AM	Liquid crystals: Classification and properties (3h) Section 5.1-5.4
12	AM	Liquid crystals: Molecular order and phase transitions (3h) Section 5.5-5.8
13	NH	Biological soft matter (2h) Chapter 6

Week	Time	Monday	Tuesday	Wednesday	Thursday	Friday
13 (20/3-24/3)	9:15-12:00 13:15		//////////// **L1 (AM)**	**Self studies**	**L2 (AM)**	**L3 (AM)**
14 (27/3-31/3)	9:15-12:00 13:30	**L4 (LB)**	**L5 (LB)**	**L6 (LB)**	**Self studies**	**Self studies**
15 (3/4-7/4)	9:15-12:00 13:30	**L8 (NH)** **Exercise 1**	**L7 (LB)**	**LG1 Lab1** **LG2 Lab1**	**LG1 Lab2** **LG2 Lab2**	**Self studies**
16 (10/4-14/4)	9:15-12:00 13:30	**L9 (NH)**	**L10 (NH)**	**L11 (AM)** **Exercise 2**	**EASTER**	**EASTER**
17 (17/4-21/4)	9:15-12:00 13:30	**EASTER**	**Self studies**	**Self studies**	**L12 (AM)**	**LG1 Lab3** **LG2 Lab3**
18 (24/4-28/4)	9:15-12:00 13:30	**L13 (NH)** **Exercise 3**	**Self studies**	**Self studies**	Exam 9-14	**Self studies**

Laboratory exercises:

Lab1:	Lab 2:	Lab 3:
Rheology	Light scattering	Computer simulations