

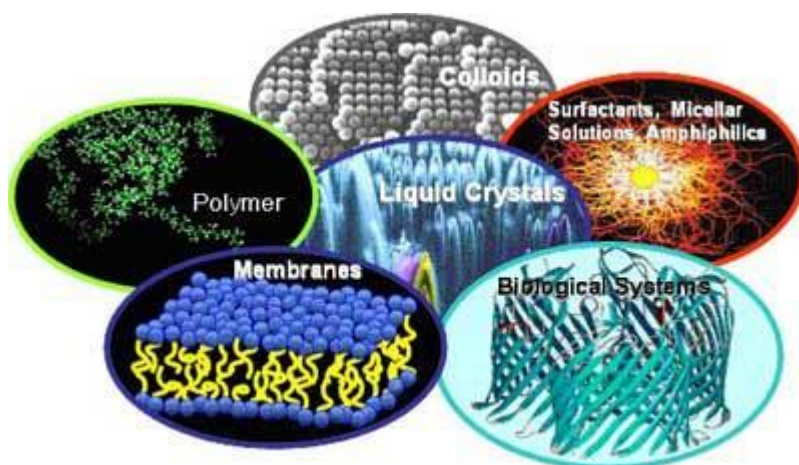
Winter Semester 2016-2017 Lecture

Soft Matter

(LV 21242 a&b – 5 credits)

Mondays 14:00 – 18:00 hs, Room 23.02

Course starts Monday 17.10.2016



<http://www.eu-softcomp.net/FILES/front-page-figr.jpg>

Program:

1st part:

- Introduction: What is soft matter? What are the general aspects of soft matter? Why is it important?
- Amphiphiles: Self-assembly of amphiphiles such as surfactants and block copolymers in bulk and solution (micelles, vesicles)
- Gels: What is a gel? Applications of (hydro)gels for biomedical applications
- Colloids
- Liquid crystals
- Soft Matter in Nature: Biomembranes, artificial cells, etc.
- Self-healing polymers, Shape memory polymers for biomedical applications

2nd part:

- Fundamentals: Forces, energies, and timescales in soft matter, A brief intro to phase transitions
- Polymers: Introduction to polymers, Ideal chains, Real chains, Polymer thermodynamics, Viscoelasticity
- Gels: Percolation theory, Swelling

Jun.-Prof. Dr. Marcelo Calderon
Institut für Chemie und Biochemie
marcelo.calderon@chemie.fu-berlin.de

Jun.-Prof. Dr. Annabelle Bertin
Institut für Chemie und Biochemie & BAM
annabelle.bertin@bam.de