

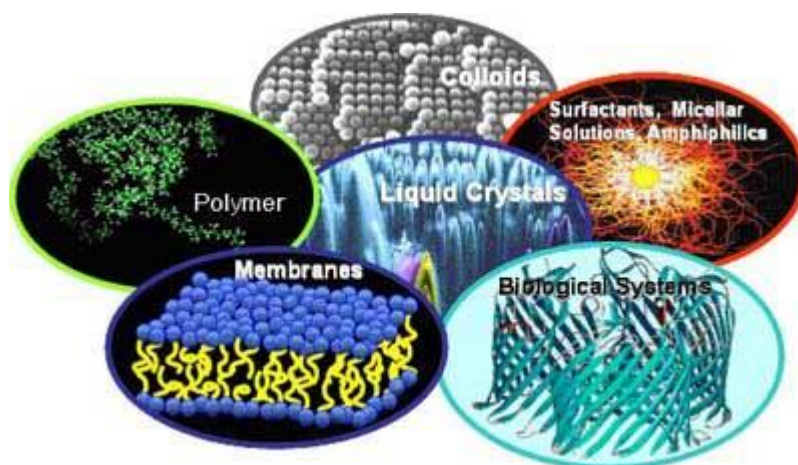
Winter Semester 2015-2016 Lecture

Soft Matter

(LV 21242 a&b – 5 credits)

Mondays 14:00 – 18:00 hs, Room 23.02

Course starts Monday 12.10.2015



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

Program:

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