COURSE DETAIL

SURFACE AND COLLOID CHEMISTRY
Country Sweden
Host Institution Lund University
Program(s) Lund University
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Engineering Chemistry
UCEAP Course Number 148
UCEAP Course Suffix
UCEAP Official Title SURFACE AND COLLOID CHEMISTRY
UCEAP Transcript Title SURFC&COLLOID CHEM
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description
Surface and colloid chemistry is a knowledge area with numerous applications within all areas of chemical and biotechnological engineering. For instance almost all foods, numerous drugs, biological systems, bacterial suspensions, many polymer materials, all ceramic materials, multiphase processes and most chemical-technical consumer products are dispersions or by other means colloidal. The course is based on surface-active components. Both synthetic and natural amphiphiles are treated. Different phases (micellar, liquid crystalline and microemlsions) as well as aggregates such as vesicles are studied. A central concept is interparticular interactions in relation to colloidal stability. The role of surface activity in controlling interactions through adsorption and non-adsorption is discussed in relation to technical functionality in systems like emulsions and foams. The role of surface activity for wetting, filtration, dewetting, and sintering is discussed. A generally important aspect is how the material properties of dispersed systems are influenced by colloidal interactions and surface phenomena's. The exercise part of the course treats quantitative aspects of the theory as well as problem solving in colloid chemistry. The labs are aimed to illustrate how different surface and colloidal system might be constructed and work. The projects consist of an analysis of surface and colloidal aspects of manufacturing, formulation or application of a consumer product with relevance to the interest of the student.

Language(s) of Instruction
English

Host Institution Course Number
KFKN05

Host Institution Course Title
SURFACE AND COLLOID CHEMISTRY

Host Institution Campus
Engineering

Host Institution Faculty

Host Institution Degree

Host Institution Department
Engineering- Food Technology

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