

COURSE DETAIL

ADVANCED PHYSICAL CHEMISTRY

Country

Denmark

Host Institution

University of Copenhagen

Program(s)

University of Copenhagen

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Chemistry

UCEAP Course Number

165

UCEAP Course Suffix**UCEAP Official Title**

ADVANCED PHYSICAL CHEMISTRY

UCEAP Transcript Title

ADV PHYSICAL CHEM

UCEAP Quarter Units

12.00

UCEAP Semester Units

8.00

Course Description

This course describes aspects of both experimental and theoretical advanced physical chemical methods. It includes gas phase, condensed phase, and solid phase. The focus is on uses of a broad range of spectroscopies to gain information of the underlying physical chemistry. Rotations, vibrations and electronic transitions in molecules as well as scattering from solids are discussed. Theory of molecular vibration within the local mode model and experimental techniques used to observe the weak overtone transitions associated with the highly vibrational excited molecules is explained. Single molecule fluorescence, Raman spectroscopy and X-ray scattering is studied. The main aim is that student is able to critically read literature in the areas covered. The course covers the following: theory of rotational, vibrational, and electronic transitions; different experimental techniques used in gas, liquid and solid phase spectroscopy; typical acronyms: IR, Raman, CRDS, PAS, SERS, CARS, FRET, XPS, UPS, EXAFS, X-ray scattering; experimental experience with IR, Raman and fluorescence measurements.

Language(s) of Instruction

English

Host Institution Course Number

NKEK10004U

Host Institution Course Title

ADVANCED PHYSICAL CHEMISTRY

Host Institution Campus

Science

Host Institution Faculty

Host Institution Degree

Host Institution Department

Chemistry

[Print](#)