

## COURSE DETAIL

### ADVANCED QUANTUM 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**

130

**UCEAP Course Suffix****UCEAP Official Title**

ADVANCED QUANTUM CHEMISTRY

**UCEAP Transcript Title**

ADV QUANTUM CHEM

**UCEAP Quarter Units**

6.00

**UCEAP Semester Units**

4.00

## Course Description

This course provides an understanding of the quantum chemical description of many-electron systems like atoms and molecules. Topics include general angular momentum theory; time-independent perturbation theory and variation theory; Born-Oppenheimer approximation and molecular potential energy surfaces; general operator properties and the antisymmetrizer of the permutation group; many-electron theory; Hartree-Fock-Roothaan theory for self-consistent treatment of molecular electronic states; methods for describing electron correlation; and molecular interaction with external electric fields by means of perturbation theory.

### Language(s) of Instruction

English

### Host Institution Course Number

NKEA05037U

### Host Institution Course Title

ADVANCED QUANTUM CHEMISTRY

### Host Institution Campus

### Host Institution Faculty

Faculty of Science

### Host Institution Degree

Bachelor

### Host Institution Department

Department of Chemistry

[Print](#)