

# 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 (KEMIVK)

## Host Institution Course Details

<https://kurser.ku.dk/course/nkea05037u/2021-2022>

## Host Institution Campus

## Host Institution Faculty

Faculty of Science

## Host Institution Degree

Bachelor

## Host Institution Department

Department of Chemistry

## Course Last Reviewed

2021-2022

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