

COURSE DETAIL

ADVANCED COMBUSTION ENGINE CONCEPTS

Country

Sweden

Host Institution

Lund University

Program(s)

Lund University

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Mechanical Engineering Engineering

UCEAP Course Number

183

UCEAP Course Suffix**UCEAP Official Title**

ADVANCED COMBUSTION ENGINE CONCEPTS

UCEAP Transcript Title

ADV COMBUST ENGINE

UCEAP Quarter Units

6.00

UCEAP Semester Units

4.00

Course Description

The course starts from the challenges facing current internal combustion engines. The historical development of engines is reviewed to better understand the reasons for current engine designs. Next, experimental and numerical tools are reviewed for investigating the processes occurring in engines, which are used in studying and improving engine designs. Advanced engine concepts and fuels are then discussed, with their merits and challenges. This includes advanced engine controls. Finally, an outlook is given as to where continued research and development of engines and fuels can lead, and how the combustion engine can be part of a sustainable future. Engine combustion is analyzed in laboratory exercises. Simulation exercises are also conducted with the purpose of making the students identify the engine's response to changes to its components and settings as well as running engines virtually. Normally a guest lecture is given by an expert from industry.

Language(s) of Instruction

English

Host Institution Course Number

MVKN55

Host Institution Course Title

ADVANCED COMBUSTION ENGINE CONCEPTS

Host Institution Campus

Engineering

Host Institution Faculty

Host Institution Degree

Host Institution Department

Engineering- Energy Sciences

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