COURSE DETAIL

INTRODUCTION TO COMBUSTION ENGINES
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 121
UCEAP Course Suffix
UCEAP Official Title INTRODUCTION TO COMBUSTION ENGINES
UCEAP Transcript Title COMBUSTION ENGINES
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description
This course discusses the processes that occur in an internal combustion engine and the reason why it is designed as it is. It begins with an overview of the most common types of combustion engines (the spark ignition engine, diesel engine, Wankel, and Stirling engines) and the differences between two-stroke and four-stroke engines. The course then reviews both the parameters used to characterize an engine, such as medium-pressure piston and average speed, and the coupling between the engine characteristics and the requirements that a vehicle imposes on the engine. The course also includes a review of the general burning of an arbitrary fuel. Students learn to determine the air needs for complete combustion and no exhaust analysis. The course covers the ideal thermodynamic cycles with combustion at constant pressure or constant volume, Otto and Diesel engines' combustion processes and emissions, motors' mechanical systems, gas exchange, and overcharging. The course is composed of lectures, a guest lecture by an industry representative, exercises, and two labs, the first of which involves removing and installing a gasoline engine, and the other involves running a diesel engine in a dyno and measuring emissions.

Language(s) of Instruction
English

Host Institution Course Number
MVKN50

Host Institution Course Title
INTRODUCTION TO COMBUSTION ENGINES

Host Institution Course Details

Host Institution Campus
Engineering

Host Institution Faculty

Host Institution Degree

Host Institution Department

Engineering- Energy Sciences

Course Last Reviewed

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