COURSE DETAIL

THERMODYNAMICS I
Country United Kingdom - England
Host Institution University of London, Queen Mary
Program(s) University of London, Queen Mary
UCEAP Course Level Upper Division
UCEAP Subject Area(s) Engineering
UCEAP Course Number 121
UCEAP Course Suffix
UCEAP Official Title THERMODYNAMICS I
UCEAP Transcript Title THERMODYNAMICS I
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description
This course covers the fundamental principles of general non-equilibrium thermodynamics. It examines applications of single-constituent fluids, and provides background for all applications in engineering. Students learn what is meant by the terms thermodynamic system; state; property; equilibria; first and second laws of thermodynamics; formal definitions energy, entropy, temperature, work and heat interactions; extensive property; intensive property; simple fluid system; internal energy; entropy; temperature and pressure of a simple fluid system; static; stagnation; and total properties. The course explores ideal and perfect gases and derives expressions for their internal energy, enthalpy, entropy, and specific heat capacities. Students use tables of thermodynamic properties and perform simple calculations on the performance of energy conversion devices and simple thermodynamic cycles. They gain an understanding of the requirement of equality of temperature, pressure and specific Gibbs function for equilibrium between phases of a pure (single constituent) fluid.

Language(s) of Instruction
English

Host Institution Course Number
DEN107

Host Institution Course Title
THERMODYNAMICS I

Host Institution Campus
Queen Mary

Host Institution Faculty

Host Institution Degree

Host Institution Department
Engineering and Materials Science

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