ESS240001 熱力學（清班）

Fall 2013

任課教授：陳紹文 教授 （工科舊館208室，分機：34169 ）
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上課時間：M7 M8 R6
上課地點：工科館 501 室
助教：

助教值勤時間：Tuesday、Thursday PM 3:00 – 5:00

教科書：Michael.J. Moran, Howard.N. Shapiro, "Principles of Engineering Thermodynamics", 7th Edition, John Wiley & Sons, Inc., SI Version

參考書：R.E. Sonntag, C. Borgnakke, G.J. Van Wylen, "Fundamentals of Thermodynamics", 6th Edition, John Wiley & Sons, Inc.
Yunus A. Cengel, Michael A. Boles, "Thermodynamics; An Engineering Approach", 4th Edition, 2002, WCB McGraw-Hill

網址：http://ecs.ess.nthu.edu.tw/thermo.htm

成績計算方式：

1st Examination	25%
2nd Examination	25%
Final Examination	25%
Homework	10%
Quiz	15%

教學方式:
1. 課堂講授
2. power point 與寫黑板方式, power point 將放在網頁上自由 download

章節	課程內容	授課週數
Chapter 1	Introductory concepts and definition (T, P, units, etc. …..)	**1**
Chapter 2	Energy & First law of Thermodynamics (Work, heat, energy transfer etc.)	**1**
Chapter 3	Properties of a pure, simple compressible substance (State principle, p-v-T relation, thermodynamics properties, ideal gas model etc,)	**3**
Chapter 4	Control volume energy analysis(Conservation of mass, conservation of energy, steady state, transient state etc.,)	**2**
Chapter 5	Second law of thermodynamics (Second law, reversible, irreversible, maximum performance measures for power, refrigeration, and heat pump cycles operating between two reservoirs, Carnot cycle etc…)	**3**
Chapter 6	Entropy(Clauses inequality, definition, isentropic processes, isentropic efficiencies of turbines, nozzles, compressors and pumps, and heat transfer and work in internal reversible, steady state flow processes etc..)	**4**
Chapter11	Thermodynamic relations for a simple compressible substance, Equation of state, Maxwell relation, constructing table of thermodynamics properties, generalized charts for enthalpy and entropy, p-v-T relations for gas mixture	**6**

總計**:60** 小時