

## The Hong Kong University of Science and Technology

**Course Title:** THERMODYNAMICS

**Course Code:** MECH 2310

**No. of Credits:** 3 units

**Pre-requisites:** MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023

**Instructor:** Prof. Lin FU (Office 2606A, Email [linfu@ust.hk](mailto:linfu@ust.hk))

**Teaching Assistants:** Mr. Zeyu ZHANG (Email [zzhangix@connect.ust.hk](mailto:zzhangix@connect.ust.hk))  
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### Course Description:

Fundamental Concepts; Pure substance; Work and heat; Control volume; Ideal and real gases; First and second laws of thermodynamics; Entropy; Elementary power and refrigeration cycles.

### Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Final examination	50%
Mid-Term	35%
Homework	15%

### Required Texts and Materials:

Y.A. Cengel and M.A. Boles, Thermodynamics – An Engineering Approach, 8th Edition in SI Units, McGraw Hill, 2015. (Presentation Materials can be downloaded from the Learning Management and Evaluation System web site: <https://canvas.ust.hk>)

### Classrooms and Time Slots:

Lecture: Tuesday – 16:30 - 17:50 (Rm 2406)  
Thursday – 16:30 - 17:50 (Rm 2406)  
Tutorial: Friday – 16:30 - 17:20 (Rm 2304)

### Schedule: (Times are subject to change)

Week 1: Introduction - Some basic concepts  
Week 2: Introduction - Energy Analysis  
Week 3: Introduction - Energy Analysis  
Week 4: Properties of Pure Substance  
Week 5: Properties of Pure Substance  
Week 6: Work and heat  
Week 7: First law of thermodynamics  
Week 8: First law of thermodynamics and Mid Term Exam  
Week 9: Second law of thermodynamics and Site visit  
Week 10: Second law of thermodynamics  
Week 11: Entropy  
Week 12: Entropy and more on Irreversibility  
Week 13: Review