

MEC301 – Thermodynamics

The State University of New York, Korea

Fall 2018

Instructor: Mahdi Mohebbi, B622 Academic Building (mahdi.mohebbi@sunykorea.ac.kr)

Lectures: Tuesdays and Thursday 3:30-4:50 PM

Textbook: Çengel Y., Boles M. A., "Thermodynamics – An Engineering Approach", McGraw-Hill Education, 8 ed., 2015

Office Hours: Monday and Wednesday 3:45-4:45 PM, Tuesday 10:30-11:30 AM (or by appointment)

Grading:

Homework	25%
Midterm (Nov. 1, 2018)	35%
Final exam	40%

The grades will not be touched! No rounding, fitting to the curve or any other statistical operation will be performed (e.g. 93.99 is not 94.00).

Policies:

- Homework assignments and their solutions will be posted on the Blackboard.
- The Blackboard can be accessed at <https://blackboard.stonybrook.edu/>.
- The time and details about exams will be announced in the class (and also posted on the Blackboard).
- It is the responsibility of students to make sure that they can access the Blackboard and they have a working email registered with it. The Blackboard should be checked frequently for new materials.
- Following “flipped classroom” policies of SUNY Korea, this course may include reading assignments and incorporation of supplementary materials in various forms (including online content).
- Exams will be open book and note. Each person should have a calculator for the required computations.

	Topics	Reading
Week 1 (Aug. 28, Aug. 30)	Systems, State, Equilibrium, Processes	1-1 – 1-7
Week 2 (Sep. 4, Sep. 6)	Basic properties, Energy, Work	1-8 – 1-10, 2-1 – 2-4
Week 3 (Sep. 11, Sep.13)	Energy transfer, First law of thermodynamics	2-5 – 2-6
Week 4 (Sep. 18, Sep. 20)	Efficiency, Properties of pure substances	2-7 – 2-8, 3-1 – 3-3
Week 5 (Oct. 2, Oct. 4)	Property diagrams, Property tables	3-4 – 3-5
Week 6 (Oct. 11)	Property tables	3-5
Week 7 (Oct. 16, Oct. 18)	Ideal gas, Analysis of closed systems	3-6 – 3-7, 4-1
Week 8 (Oct. 23, Oct. 25)	Analysis of closed systems	4-2
Week 9 (Oct. 30, Nov. 1)	Specific heats, Midterm	4-3 – 4-5
Week 10 (Nov. 6, Nov. 8)	Analysis of open systems, Steady state systems	5-1 – 5-4
Week 11 (Nov. 13, Nov. 15)	Energy analysis of unsteady C.V.s, Second law	5-5, 6-1 – 6-3
Week 12 (Nov. 20, Nov. 22)	Second law, Irreversibility	6-4 – 6-6
Week 13 (Nov. 27, Nov. 29)	Carnot cycles and Carnot's theorem	6-7 – 6-10
Week 14 (Dec. 4, Dec. 6)	Entropy, The Clausius inequality, Entropy of pure substances, The Fundamental relation of thermodynamics	7-1 – 7-5, 7-7 – 7-9
Week 15 (Dec. 11)	Reversible work, Isentropic Efficiency, Remarks on entropy	7-10, 7-12, 7-6

Disability Support Services (DSS):

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact One-Stop Service Center, Academic Building A201, (82) 32-626-1117. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Academic Integrity Statement:

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website:

http://www.stonybrook.edu/commcms/academic_integrity/index.html

Critical Incident Management Statement:

The State University of New York, Korea expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

Attendance Policy of SUNY Korea:

1. All students of SUNY Korea are required to attend every class.
2. Unexcused absences will affect seriously the student's final grade in the course.
3. If a student has over 20% unexcused absence, the student's final course grade will be an 'F'.
4. Students should report the reason of absence to the instructor in advance, or immediately after the absence.

5. When a student excuses his/her absence, the student must provide documentation of the reason for the absence to the instructor.
6. The instructor of the course reserves the right to excuse absences.
7. The course instructor may excuse the absence if the submitted documentation fulfills the conditions below.
 - Extreme emergencies (e.g. death in the family)
 - Severe medical reasons with doctor's note (Not a slight illness)
 - Very important events (e.g. national conference, official school event)
8. At the end of semester, the course instructor should submit a copy of the attendance sheet to the Academic Affairs Office.