

## Syllabus

### ME 0051 – Introduction to Thermodynamics

Fall Semester 2021

<b>Lecture Times:</b>	M 1:50~4:25 pm	<b>Instructor:</b>	Dr. Jin Xu
<b>Classroom:</b>	4-202	<b>Office:</b>	4-219
<b>Office Hours:</b>	M&T 4:30~6 pm	<b>Email:</b>	jin.xu@scupi.cn

**Teaching Assistant:** TBA. **Email:** TBA. **Office Hours:** TBA.

#### Catalog Description:

This 3-credit course is an introduction into classical thermodynamics to provide an understanding of the basic concepts that relate to thermodynamic systems. Topics covered will include conservation of energy, work, heat, power systems, power cycles, real cycles and ideal cycles. Prerequisite: *PHYS 0174, CHEM 0960*.

#### Course Outcomes:

- To be able to define and state the first law of thermodynamics.
- To be able to define terms such as heat, work, energy and thermal efficiency.
- Identify and describe various forms of energy.
- Describe and define various forms of energy processes such as heat engines, refrigeration and heat pumps.
- Apply first law analysis to thermodynamic system components
- Apply reversible analysis to a power system
- Apply irreversible analysis to a power system.

#### Required Textbook:

Fundamentals of Thermodynamics, 10th Edition, Claus Borgnakke, SI Version Global Edition.

#### Additional Reference:

Moran, and Shapiro, Fundamentals of Engineering Thermodynamics, 8th Edition, Willey.

#### Course Policies:

Regular class attendance is expected. Each student is responsible for all of the material presented in class and in the reading assignments. Exams will emphasize treatment of material covered in lectures. In general, no late assignments will be accepted or makeup exams given. Exceptions will be made for a valid excuse consistent with University Policy. If you cannot attend an exam or meet a due date, you must contact the instructor *prior to* the exam or due date. Arrangements will be made for students on a case-by-case basis. (Failure to contact the instructor prior to the exam or assignment due date will result in a zero on that exam/assignment.)

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### Integrity and Academic Expectations:

“Violations of academic integrity include, but are not limited to, cheating, plagiarism, or misrepresentation in oral or written form. Such violations will be dealt with severely, in accordance with University policy. Plagiarism means representing someone else’s idea or writing as if it were your own. If you use someone else’s ideas or writing, be sure the source is clearly designated.” It is expected that students adhere to the academic integrity policy that is presented in the Student’s Honor Code of Conduct / Student Handbook.

### Grading Policy:

Exams 1 & 2 = 20% each, Final = 30%, Homework = 10%, and Studios = 20%. Please go to Grade Center on BB for up-to-date grades. Grades will ***not*** be curved, and the official SCU grading scale will be used when determining your final letter grade (based on the numerical grade).

### Exam Schedule:

Exam 1: Oct. 18<sup>th</sup>, Exam 2: Nov. 22<sup>nd</sup>, and Final: Jan. 3<sup>rd</sup>.

### Tentative Course Schedule:

Week	Date	Chapter
1	8/30	1
2	9/6	2
3	9/13	3
4	9/20	No Class –Mid-Autumn
5	9/27	3
6	10/4	No Class –National Day
7	10/11	4
8	10/18	<b>Exam #1</b>
9	10/25	4
10	11/1	5
11	11/8	5
12	11/15	6
13	11/22	<b>Exam #2</b>

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14	11/29	Intro to Class Project
15	12/6	7
16	12/13	7
17	12/20	9 & 10
18	12/27	Exam Review
19	1/3	<b>Final Exam</b>
20	1/10	Final Grades Posted on BB & End of Semester