M00 001 – Thermodynamics I
August-December 2004

Thermodynamics
2:00–3:00 MWF CIAP–407

Professor: J. Rafael Pacheco
Office: A4-137-B
Office hours: T W Th 8:00–9:00 a.m. or by appointment
Web Page: http://math.la.asu.edu/ rpacheco
Phone: (81)-8358-2000, ext. 5430 a 5432
Prerequisite: Approved F00812. 3 IFI, 5 IMA, 5 IME. Equivalence: Tf95854.
Objectives: To acquire a thorough understanding of basic thermodynamics concepts, such as first
and second law for closed and open systems.
Course meetings: Attendance at all class meetings in their entirety is expected. If you cannot
attend due to illness or other obligations, I appreciate being notified by email or telephone. All cell
phones must be turned off before entering the class.
Coverage: The course will cover the following topics:

- Introductory concepts and definitions
- Energy and the first law of Thermodynamics
- Properties of a pure, simple, compressible substance
- Control volume energy analysis
- Second law of Thermodynamics
- Entropy

Test: (600 points). There will be 3 in-class exams.
Quizzes and Homework: (100 points total). No make-up quizzes will be given and late homework
will not be accepted.
Final Exam: (300 points). Date to be determined. The final exam schedule listed in the schedule
of classes will be strictly followed. It is the policy of the Department of Mechanical Engineering that
makeup exams will only be given for the following reasons:
1. Religious conflict (e.g., the student celebrates the Sabbath on Saturday).
2. The student has more than three exams scheduled on the day that includes the Thermodynamics
I final.
3. There is a time conflict between a student’s mathematics final and another final exam.
4. There is a last-minute personal or medical emergency.
Make-up exams: Make-up exams will not be given. Permission to take an exam at a time other
than the schedule one will be granted at the discretion of the instructor. Arrangements must be
made before the date of the test. Unexcused absences from exams will result in a grade of zero.
Grading and policies: Grades will be based on a combination of homework assignments, in-class
exams, and a comprehensive final examination, as follows: 3 midterms (200 points each, total 600
points); homework (100 points); final exam (300 points).

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Exam dates: There will be three midterm examinations, to be administered in class on the following dates. The approximate syllabus is given in the right-hand column.

- Monday, August 30: Chapters 1–2
- Monday, September 27: Chapters 3–4
- Monday, November 1: Chapters 5–6
- Final exam, December 1st, 2:30 pm: To be confirmed

About the course content: You are expected to read the assigned sections of the text before the next class period. Even if you do not understand the details, reading the book ahead of time will make the lectures and computer labs more understandable.

Suggestion for study: I encourage you to collaborate with other M00 001 students, for example by forming a study group of members from class. Working on assigned problems and class attendance are essential to survival.

I welcome your questions and your discussions outside of class, and hope that our work together will result in you developing both understanding and enthusiasm when it comes to Thermodynamics.

Notes: Deviations from the above and changes to the schedule below are at the discretion of the instructor.

References